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Oribatids from Brunei II (Acari: Oribatida). (*Acarologica Genavensia* LXXXII)[1]

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Oribatids from Brunei II. (Acari: Oribatida). *(Acarologica Genavensia LXXXII).* - Twenty-four species are listed, fourteen are new to science. Three new genera are established, one in the family Hermanniellidae (*Bruneiella* gen. n.) and two in the family Haplozetidae (*Bolkiah* gen. n. and *Borneozetes* gen. n.). The following new combination is proposed: *Teraja tuberculata* (Mahunka) comb. n. = *Microzetes tuberculatus* Mahunka, 1987.

Key-words: Acari - Oribatida - Taxonomy - New species, new genera - Brunei.

INTRODUCTION

In the first part of this series dealing with the oribatids gathered in the Sultanate of Brunei, I described the collecting circumstances, and made reference to the final aim and motives of this work (Mahunka 1995). I also listed the basic literature and presented the fundamental principles of terminology used.

The material proved to be very rich and included several new taxa. Presently[2] I propose to discuss 24 species of which 14 are new. Three species also represent new genera belonging to two families: *Bruneiella* gen. n. (Hermanniellidae), *Bolkiah* gen. n. and *Borneozetes* gen. n. (Haplozetidae). The occurrence in Brunei of the following two species is also of particular interest: *Gehypochthonius xarifae* Strenzke, 1963 and *Epilohmannoides esulcatus* Ohkubo, 1979.

[1] New title for the series "Neue und interessante Milben aus dem Genfer Museum I. - LX." and "New and interesting mites from the Geneva Museum LXI. - LXXX.".

[2] This research programme was partly sponsored by the Hungarian Scientific Research Fund (Otka No. 16729).

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LIST OF LOCALITIES

Bru–88/21: Brunei (Belait District): "Andulau Forest Reserve", à 3,5 km au sud de Sungai Liang (= à 39,5 km de Labi), forêt primaire ("Mixed dipterocarp forest"), K–7 ("Kompartment 7"), prélèvement de sol dans les angles formés par les contreforts de grands arbres, 50 m; 19.XI.1988; leg. B. Hauser (B)[3]

Bru–88/29: Brunei (Belait District): Sungai Liang, "Arboretum Forest Reserve", forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts de deux arbres appelés "Nyatho", 90 m; 21.XI.1988; leg. B. Hauser (B)[3]

Bru–88/41: Brunei (Belait District): Sungai Liang, "Arboretum Forest Reserve", forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts d'arbres appelés "Kempas" (= *Koompassia malaccensis* Maing. & Benth. [Fabaceae]), 20 m; 25.XI.1988; leg. B. Hauser (B)[4]

Bru–88/46: Brunei (Belait District): "Andulau Forest Reserve", à 3,5 km au sud de Sungai Liang (= à 39,5 km de Labi), forêt primaire ("Mixed dipterocarp forest"), K–8 ("Kompartment 8"), prélèvement de sol dans les angles formés par les contreforts d'un grand arbre, 70 m; 26.XI.1988; leg. B. Hauser (B)[4]

ABBREVIATIONS USED

MHNG = Muséum d'histoire naturelle, Genève.

HNHM = Hungarian Natural History Museum, Budapest, with identification number of the specimens in the Collection of Arachnida.

LIST OF IDENTIFIED SPECIES

Eniochthoniidae Grandjean, 1947

Eniochthonius sumatranus (Mahunka, 1989)

Locality: Bru–88/41: 10 specimens.

Distribution: Sumatra (known from the type locality only) and the Comoro Islands (unpublished: Mwali (Moheli) Island: near Mriringoni village, 230–400 m; 30.VIII.1992; leg. T. Pócs); new record for Brunei.

Gehypochthoniidae Strenzke, 1963

Gehypochthonius xarifae Strenzke, 1963

Locality: Bru–88/41: 80 specimens.

Distribution: Known from the type locality only (Hitadu Island, Maldives Islands); new record for Brunei.

Parhypochthoniidae Grandjean, 1932

Parhypochthonius asiaticus sp. n.

Locality: Bru–88/41.

[3] (B) = extraction par appareil Berlese à Bandar Seri Begawan (Brunei).

[4] (B)) extraction par appareil Berlese à Hong Kong.

Phthiracaridae Perty, 1841

Hoplophthiracarus (Plonaphacarus) aculeatus Mahunka, 1995

Locality: Bru–88/46: 1 specimen.

Distribution: Brunei, Sarawak.

Temburongiidae Mahunka, 1990

Temburongia patoi Mahunka, 1990

Localities: Bru–88/41: 16 specimens, Bru–88/46: 18 specimens.

Distribution: Brunei.

Epilohmanniidae Oudemans, 1923

Epilohmannia nortoni sp. n.

Localities: Bru–88/29; Bru–88/41; Bru–88/46.

Epilohmannoides esulcatus Ohkubo, 1979

Localities: Bru–88/29: 4 specimens; Bru–88/41: 10 specimens; Bru–88/46: 1 specimen.

Distribution: Japan, Sarawak; new record for Brunei.

Lohmanniidae Berlese, 1916

Papillacarus lienhardi sp. n.

Locality: Bru–88/29.

Hermanniellidae Grandjean, 1934

Bruneiella sultan gen. n., sp. n.

Localities. Bru–88/41; Bru–88/46.

Microtegeidae Balogh, 1961

Microtegeus sabahnus Mahunka, 1987

Localities: Bru–88/21: 3 specimens; Bru–88/41: 2 specimens.

Distribution: Well distributed in Borneo; new record for Brunei.

Suctotegeus tumescitus Mahunka, 1987

Locality: Bru–88/41: 1 specimen.

Distribution: Known from some localities in Sabah; new record for Brunei.

Microzetidae Grandjean, 1936

Anakingia borneensis sp. n.

Locality: Bru–88/41.

Teraja sungai sp. n.

Localities: Bru–88/41; Bru–88/46.

Teraja wongi Mahunka, 1994

Locality: Bru–88/29: 1 specimen.

Distribution: Second record for Brunei (known from the type locality only).

Carabodidae C.L. Koch, 1837

Congocepheus orientalis Mahunka, 1987

Locality: Bru–88/41: 16 specimens.

Distribution: Sumatra (known from the type locality only); new record for Brunei.

Hardybodes flabellatus Mahunka, 1994

Locality: Bru–88/41: 17 specimens.

Distribution: Brunei (known from the type locality only).

Otocepheidae Balogh, 1961

Dolicheremaeus andulauensis sp. n.

Localities: Bru–88/41; Bru–88/46.

Dolicheremaeus furcillatus sp. n.

Localities: Bru–88/21; Bru–88/46.

Dolicheremaeus wallacei sp. n.

Localities: Bru–88/29; Bru–88/46.

Otocepheus durian sp. n.

Locality: Bru–88/46.

Dampfiellidae Balogh, 1961

Dampfiella zellwegeri sp. n.

Localities: Bru–88/21; Bru–88/46.

Rhynchoribatidae Balogh, 1961

Suctoribates foliatus sp. n.

Localities: Bru–88/29; Bru–88/41.

Haplozetidae Grandjean, 1936

Bolkiah hauseri gen. n., sp. n.

Localities: Bru–88/41; Bru–88/46.

Borneozetes lanceolatus gen. n., sp. n.

Locality: Bru–88/29.

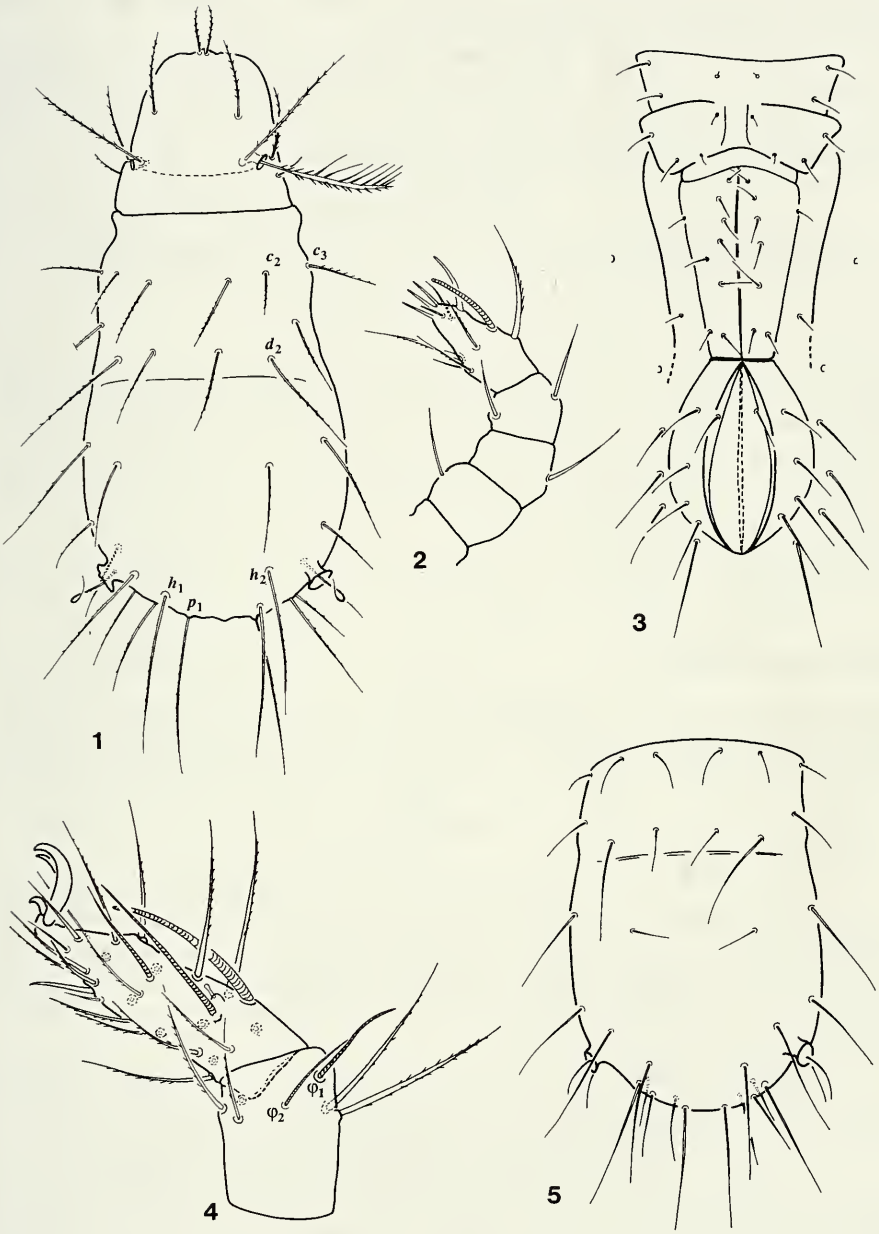
DESCRIPTIONS AND DISCUSSIONS

Parhypochthonius asiaticus sp. n. (Figs 1–4)

Material examined: Holotype: Bru–88/41, 10 paratypes from the same sample. Holotype and 6 paratypes: MHNG, 3 paratypes (1449–PO–1993): HNHM, 1 paratype: in Dr. R.A. Norton's private collection (Syracuse University, NY, USA).

M e a s u r e m e n t s . - Length of body: 305–369 µm, width of body: 147–178 µm.

P r o d o r s u m : Rostral apex hardly protruding from the anterior margin of prodorsum, rounded. Rostral setae arising on it, very near to each other. These and the



FIGS 1–5

Parhypochthonius asiaticus sp. n. — 1: body from dorsal aspect, 2: palp, 3: anogenital region, 4: tibia and tarsus of leg I. *Parhypochthonius aphidinus* Berlese, 1904 — 5: notogaster.

other four pairs of prodorsal setae conspicuously pilose. Sensillus with 8–9 long branches and numerous short spicules or barbs.

N o t o g a s t e r : Its form similar to that of the other species of this genus. All notogastral setae (Fig. 1) unambiguously pilose, seta c_3 long, much longer than seta c_2. All setae in the median and posterior part of notogaster long, seta d_2 only slightly shorter than h_2. Setae p_1 and h_1 the longest of all.

G n a t h o s o m a (Fig. 2): Palpal setal formula: 1 – 1 – 2 – 11+1.

V e n t r a l r e g i o n s : Epimeral setal formula: 3 – 1 – 3 – 4. All setae fine and short. Anogenital setal formula: 9 – 1 – 1 – 4 – 5. All setae simple, setiform.

L e g s : All legs "tridactylous", empodium much smaller than lateral claws. The chaetotaxy of tibia and tarsus of leg I as shown in Fig. 4.

Remarks: I had the opportunity to compare three species of the genus *Parhypochthonius* Berlese, 1904 (*P. aphidinus* Berlese, 1904, *P. pilosus* Mahunka, 1991 and the above described new species), and I consider that they differ clearly from each other by the length and ratio of setae (e.g. c_3) and the pilosity of setae (smooth in *P. aphidinus*, see Fig. 5, pilose in the new species and in *P. pilosus*). See also my remarks on *P. pilosus* (MAHUNKA 1991).

Derivatio nominis: This genus was hitherto known only from the palaearctic and nearctic Regions.

Epilohmannia nortoni sp. n. (Figs 6–11, 13)

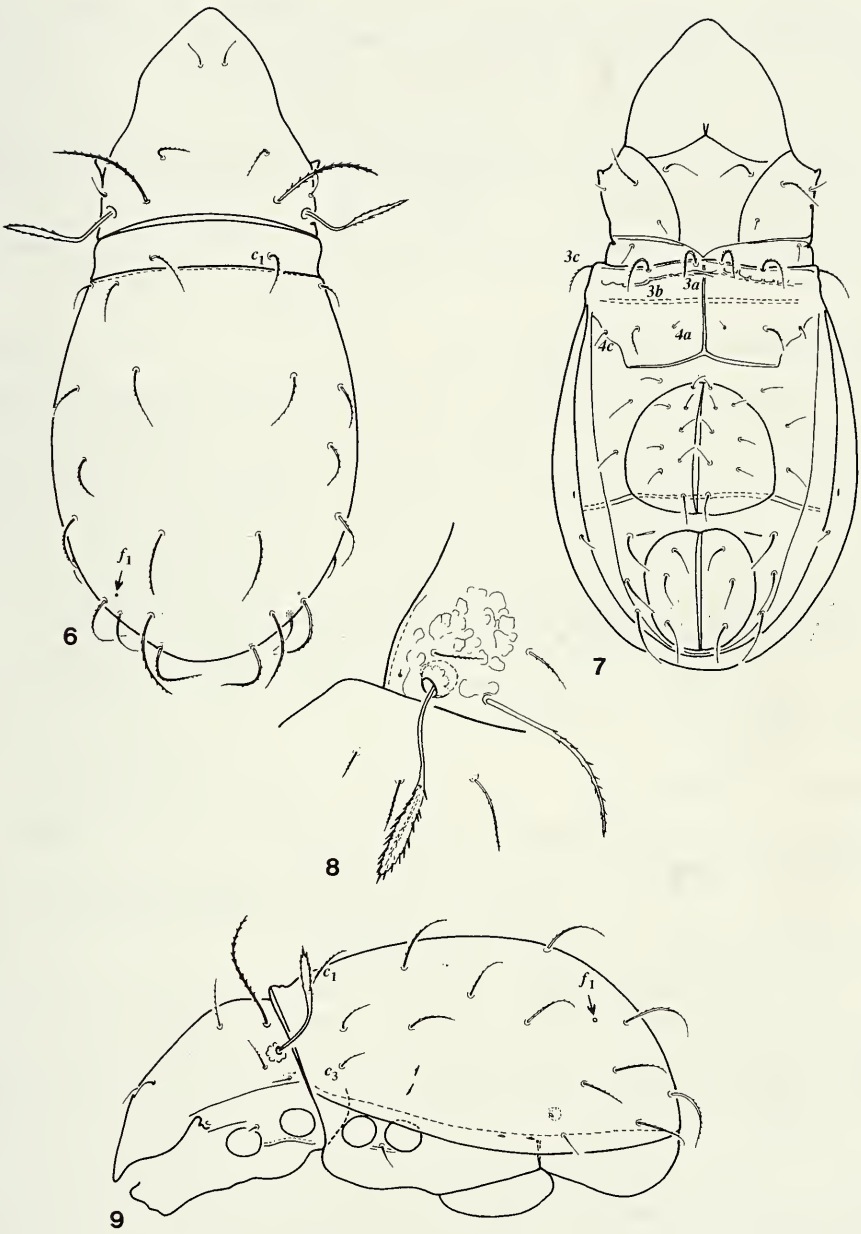
Material examined: Holotype: Bru–88/41, 8 Paratypes: from the same sample; 9 paratypes: Bru–88/46; 4 paratypes: Bru–88/29. Holotype and 12 paratypes: MHNG, 8 paratypes (1450–PO–1993): HNHM, 1 paratype in Dr. R.A. Norton's private collection (Syracuse University, NY, USA).

M e a s u r e m e n t s . – Length of body: 329–354 µm, width of body: 147–167 µm.

P r o d o r s u m : Rostrum gradually narrowing anteriorly, beak-shaped in lateral aspect. Prodorsal surface with a fine sculptural pattern in front of the trichobothrium (Fig. 8) having two acute teeth and a ridge laterally. Among the prodorsal setae only the interlamellar ones strong and long, all the others, especially the posterior exobothridial setae, much shorter and thinner than the preceding ones. Sensillus normal, with cylindrical head.

N o t o g a s t e r : Fourteen pairs of notogastral setae present. Setae x_2 smooth, all others pilose. Setae h_1 and p_1 much longer than setae c_1. A pair of alveoli (setae f_1), four pairs of lyrifissures and the glandular opening observable (Fig. 9).

V e n t r a l r e g i o n s (Fig. 7): Mentum not separated. Epimeres I widely separated from each other. All other epimeres normally developed. On the surface of epimeres *3a* characteristic, strongly sclerotized transversal ridge observable. Epimeral setal formula: 3 – 1 – 3 – 3, among the length and thickness of the setae great differences exist: setae *1a*, *2a*, *4a*, *4c* much thinner and shorter than setae *3a*, *2b*. Genital plates wide, each plate bears 8 setae, 5 of them medially, 3 laterally. Three pairs of anal and three pairs of adanal setae present.



FIGS 6–9

Epilohmannia nortoni sp. n. — 6: body from dorsal aspect, 7: body from ventral aspect, 8: sensillus and the bothridial region, 9: body from lateral aspect.

L e g s : Tarsus IV bears only one strongly thickened seta (*a*"). Setae *v*" of tibia spathulate, characteristically pilose. Legs setal formulae:

I: 1 – 5 – 4+2 – 5+2 – 17+3 – 1 (Figs 10, 13)

IV: 2 – 3 – 4+1 – 4+1– 9 – 1 (Fig. 11)

Remarks: The new species is well characterised by the dilated setae on tibia IV and the unique dilated, spiniform seta on tarsus IV. This combination of features was hitherto unknown in this genus.

Derivatio nominis: I dedicate the new species to my friend Dr. Roy A. Norton (Syracuse, USA) for his help in my work.

Epilohmannoides esulcatus Ohkubo, 1979 (Fig. 12)

The genus was not recorded for a long time after JACOT's original description (1936) of *Epilohmannoides terrae*. Almost at the same time an excellent redescription of the type species (NORTON *et al.* 1978) was published, along with the descriptions of new and very closely related species (OHKUBO 1979, HAMMER 1981). The latter two authors were only partly aware of the others' publications, therefore, some confusion arose. It appears that JACOT's species is different from each of the others by the longer and thinner spiniform setae of tarsus IV, but the two other species (*Epilohmannoides esulcatus* Ohkubo, 1979 and *E. wallworki* Hammer, 1981) might be separated only on the basis of a very insignificant difference (the form of *a*" setae of tarsus IV).

The specimens from Brunei correspond exactly to OHKUBO's description, the shape of tarsus IV is given in Fig. 12.

Papillacarus lienhardi sp. n. (Figs 14–17)

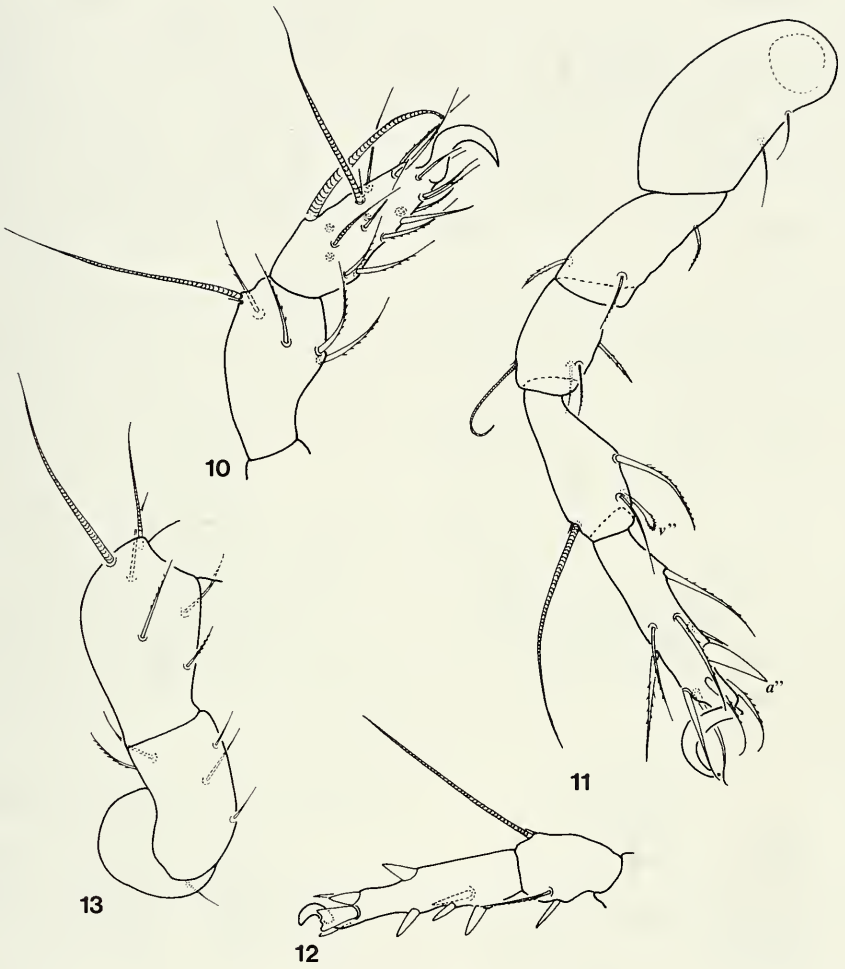
Material examined: Holotype: Bru–88/29, 32 paratypes: from the same sample. Holotype and 20 paratypes: MHNG, 12 paratypes (1451–PO–1992): HNHM.

M e a s u r e m e n t s . – Length of body: 404 µm, width of body: 202 µm.

I n t e g u m e n t : Cuticle generally punctate, with large porose areas (?) everywhere (on the body and also on the legs' surface).

P r o d o r s u m : Rostrum rounded with waved margin. Transverse band *(Sib)* distinct, gradually arched anteriorly. Prodorsal setae long, with conspicuously ciliate margins, setae *exa* and *ro* shorter than the others, setae *in* and *exp* the longest of all (Fig. 14). Sensillus slightly dilated medially, with 8–10 pectinate branches and some small spicules.

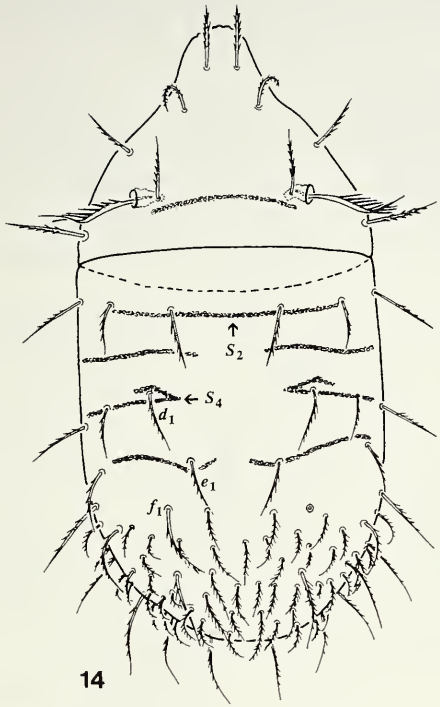
N o t o g a s t e r : Four pairs of transversal bands observable, but only one of them *(Si_2)* complete. Band Si_4 embraces the insertion of seta d_1. On the posterior half of the notogaster (behind setae f_1 and f_2) strong neotrichy present, but the normal setae (*h* and *p*) are well distinguishable. Among setae *c* and *d* no essential difference present, setae c_1 longer than c_2, all equally ciliated. Setae d_1 and e_1 also ciliate (Fig. 14). Approximately 50 neotrichial setae present on the posterior part of the notogaster, all shorter than the normal setae, but their cilia generally longer than those of normal setae.

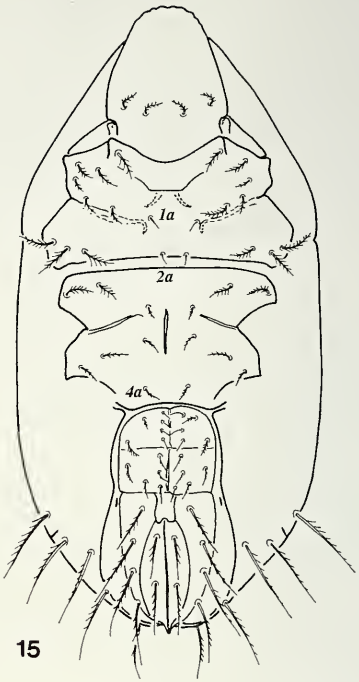


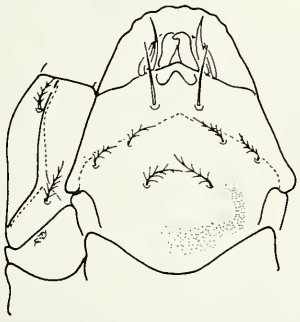
FIGS 10–13

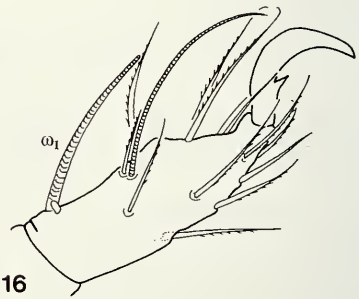
Epilohmannia nortoni sp. n. – 10: tibia and tarsus of leg I, 11: leg IV, 13: trochanter, femur and genu of leg I. *Epilohmannoides esulcatus* Ohkubo, 1979 – 12: tibia and tarsus of leg IV.

V e n t r a l r e g i o n s : Setae of mentum, excepting seta *a*, short and well ciliate (Fig. 17). Epimeral setal formula: 6(7) – 4 – 3 – 4, all setae short, mostly with long cilia. Setae *1a*, *2a*, *3a* and *4a* with shorter cilia than the others. Genital plates divided, their setation slightly variable (5 + 6). All setae ciliate, but differences exist in cilia lengths. Preanal plate narrow, like that of the other species of this genus. Anal and adanal setae setiform, with long and strong cilia (Fig. 15).









FIGS 14–17

Papillacarus lienhardi sp. n. – 14: body from dorsal aspect, 15: body from ventral aspect, 16: tarsus of leg I, 17: mentum.

L e g s : All femora have well developed ventral crests. Solenidium ω_1 of tarsus I (Fig. 16) without basal thickening.

Remarks: *Papillacarus lienhardi* sp. n. has the strongest neotrichy among the so far described species of this genus. It is also distinguished from all its related species by the comparatively long and conspicuously ciliate seta c_1, which is longer than seta c_2.

Derivatio nominis: I dedicate the new species to Dr. C. Lienhard (Geneva Museum) for his continuing help in my studies at Geneva.

Bruneiella gen. n.

D i a g n o s i s : Family Hermanniellidae. Whole body surface covered by polygonate (body) or simple (legs) cerotegument layer. Sensillus long, interlamellar seta dilated, fusiform, arising on small tubercles at the end of a longitudinal lath. Tritonymphal scalp bearing 10 pairs of large, fusiform, split and finely ciliate, and 4 pairs of small but also fusiform setae, the latter ones in posteromarginal position (Fig. 21). Epimeral setal formula: 3 – 1 – 2 – 3. Anogenital setal formula: 7 – 1 – 2 – 3. Aggenital setae located between the genital and anal opening. Legs monodactylous, with normal (leg I) or reduced (leg III and IV) chaetom.

Type species: *Bruneiella sultan* sp. n.

Remarks: On the basis of the number and size of the notogastral setae and of the presence of a pair of interlamellar crests or sclerotized plates the new genus stands nearest to *Dicastribates* Balogh & Balogh, 1988.[5] However, it differs from the latter by the modified (phylliform) interlamellar setae (simple, bacilliform in *Dicastribates*) and by the form of the interlamellar structure.

Derivatio nominis: After the Sultanate of Brunei. The name Borneo for the entire island derivates from the name Brunei.

Bruneiella sultan sp. n. (Figs 18–24)

Material examined: Holotype: Bru–88/46, 24 paratypes: from the same sample; 25 paratypes: Bru–88/41. Holotype and 29 paratypes: MHNG, 20 paratypes (1452–PO–1992): HNHM.

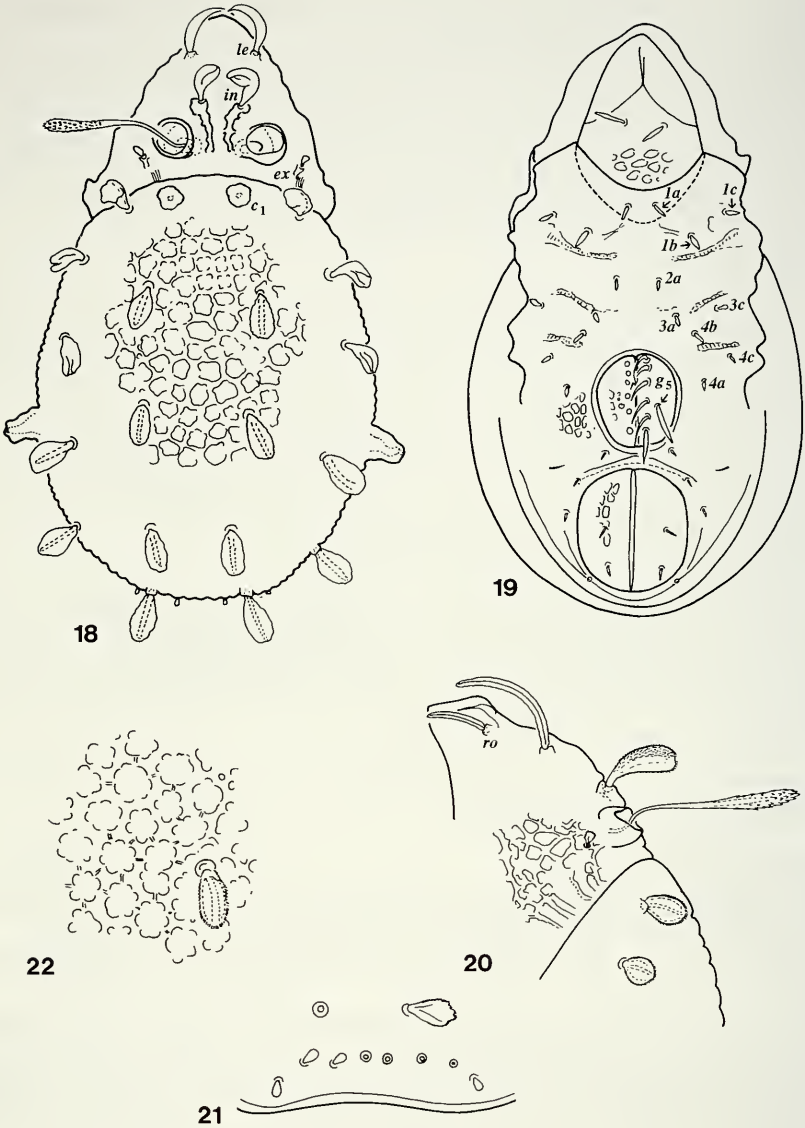
M e a s u r e m e n t s . – Length of body: 314–360 µm, width of body 176–219 µm.

I n t e g u m e n t : Thick cerotegument layer covering the whole surface. Under it a polygonate (prodorsum, notogaster, coxisternal region and the ventral plate) or foveolate (mentum, genital and anal plates) sculpture observable. The surface of the legs smooth.

P r o d o r s u m : Rostrum rounded, without incision. Bothridial cups well protruding, located near to each other. Between them a pair of longitudinal crests visible, interlamellar setae arising on their end (Fig. 18). Rostral and lamellar setae arising on small tubercles and ensiform. Interlamellar setae fusiform, split, exobothridial setae (*ex*) very small, but dilated (Fig. 20).

N o t o g a s t e r : Its setae dilated (see generic diagnosis; Fig. 22).

[5] I wish to express my sincere thanks to Dr. M. Luxton also here, for this suggestion and for giving me access to his unpublished key which allows to separate these two taxa.



FIGS 18–22

Bruneiella sultan gen. n., sp. n. – 18: body from dorsal aspect, 19: body from ventral aspect, 20: prodorsum from lateral aspect, 21: position of the posteromarginal setae, 22: sculpture of the notogaster.

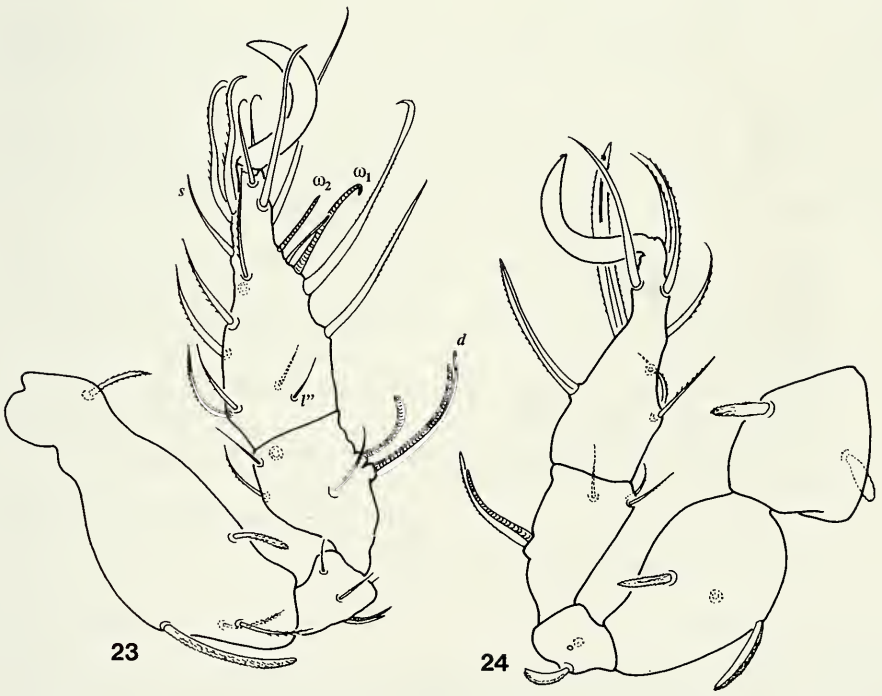
C o x i s t e r n a l r e g i o n : The apodemes (Fig. 19) hardly observable under the cerotegument layer. They seem similar to those of *Sacculobates* (as illustrated by GRANDJEAN 1962, Fig. 2). All epimeral setae simple, spiniform, their position normal.

A n o g e n i t a l r e g i o n : Genital and anal opening well framed, between them an arched transversal lath, setae ad_3 arising on its two lateral ends. Genital setae arranged in longitudinal rows, only g_5 located farther from the inner margin of the genital plates than the others. Aggenital setae arising clearly behind the genital opening.

L e g s : Solenidium ω_1 of tarsus I bent characteristically inwards, ε very long, not shorter than ω_2. Only seta *s* is eupathidial. Both setae *l* conspicuously short. Seta *d* on tibia I and both solenidia arising on a flat tubercle, the seta longer than the solenidium.

I: 0 – 5 – 4+1 – 5+2 – 18+2 – 1 (Fig. 23)
III: 2 – 2 – 3+1 – 4+1 – 9 – 1
IV: 1 – 2 – 1 – 3 – 4+1– 9 – 1 (Fig. 24)

Derivatio nominis: After the more than 600 years old Islamic monarchy (first ruler Sultan Muhammad Shah, reign: 1361–1402) of Brunei.



FIGS 23–24

Bruneiella sultan gen. n., sp. n. – 23: leg I, 24: leg IV.

Anakingia borneensis sp. n. (Figs 25–27)

Material examined: Holotype: Bru–88/41, 1 paratype from the same sample. Holotype: MHNG, paratype (1453–PO–1993): HNHM.

Measurements. – Length of body: 176–187 µm, width of body: 113–121 µm.

Prodorsum: Rostrum obtuse, with one pair of small teeth laterally, not covered by the strongly converging lamellae (Fig. 25). Lamellar cusps gradually narrowed, without sharply pointed distal end. Rostral and lamellar setae minute, interlamellar setae arising in interlamellar position, also very short. Sensillus slightly dilate, directed obliquely forwards, with short cilia on its outer margin.

Notogaster: Pteromorpha very small, observable only from lateral aspect (Fig. 27). Notogastral surface ornamented by polygonal sculpture, with a large unpaired lenticulus medially and a pair of hollows laterally. All notogastral setae minute but well visible. No difference between them.

Lateral part of podosoma: Tutorium short, with short, wide cusps.

Ventral regions (Fig. 26): Mentum longitudinally striated. Coxisternal region large, twice as long as the anogenital region. Transversal apodemes wide and strong, sternal apodeme absent between *ap. 2* and *ap. sej.* A weak polygonal reticulation also observable in this region. Epimeral setae minute. Ventral plate mostly with longitudinal wrinkles. Genital and anal plates normal, with minute setae. Anogenital setal formula: 6 – 1 – 2 – 2. Lyrifissures *iad* in adanal position.

Remarks: Both heretofore known species of this genus were described from South America. There is no doubt that the new species belongs to this taxon, but is well distinguished from the South American species by the following key:

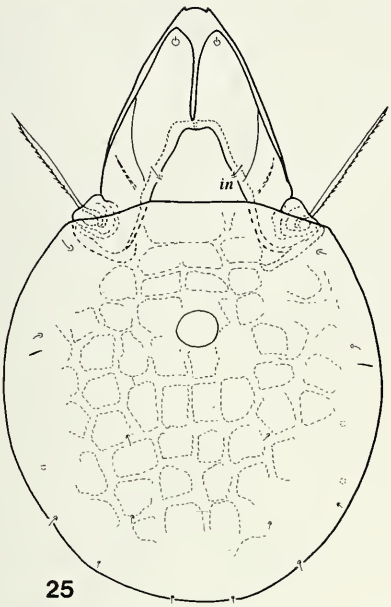
1 The notogastral sculpture consists of very small cells, they are much smaller than the diameter of the bothrydium . . . . *A. williamsae* Hammer, 1961
– The notogastral sculpture consists of large cells, they are greater than the bothrydium.
2 Whole notogastral surface ornamented by polygonal sculpture, consisting of nearly identical cells . . . . . *A. borneensis* sp. n.
– Posterior part of notogaster ornamented by elongated areas, anterior part by short ones, which are nearly as wide as long . . . . . *A. reticulata* Balogh & Mahunka, 1969

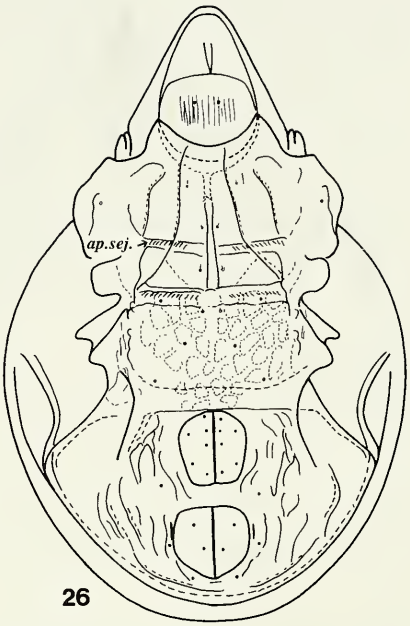
Derivatio nominis: After the island of Borneo.

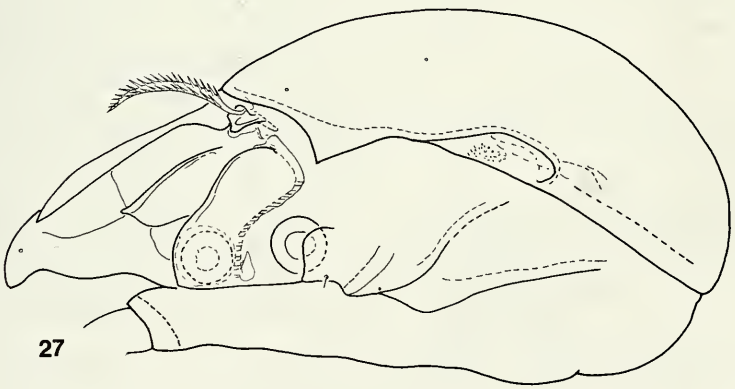
Teraja sungai sp. n. (Figs 28–32)

Material examined: Holotype: Bru–88/46, 4 paratypes: from the same sample; 4 paratypes: Bru–88/41; 1 paratype: Bru–88/29. Holotype and 6 paratypes: MHNG, 3 paratypes (1454–PO–1993): HNHM.

Measurements. – Length of body: 189–203 µm, width of body: 131–145 µm.

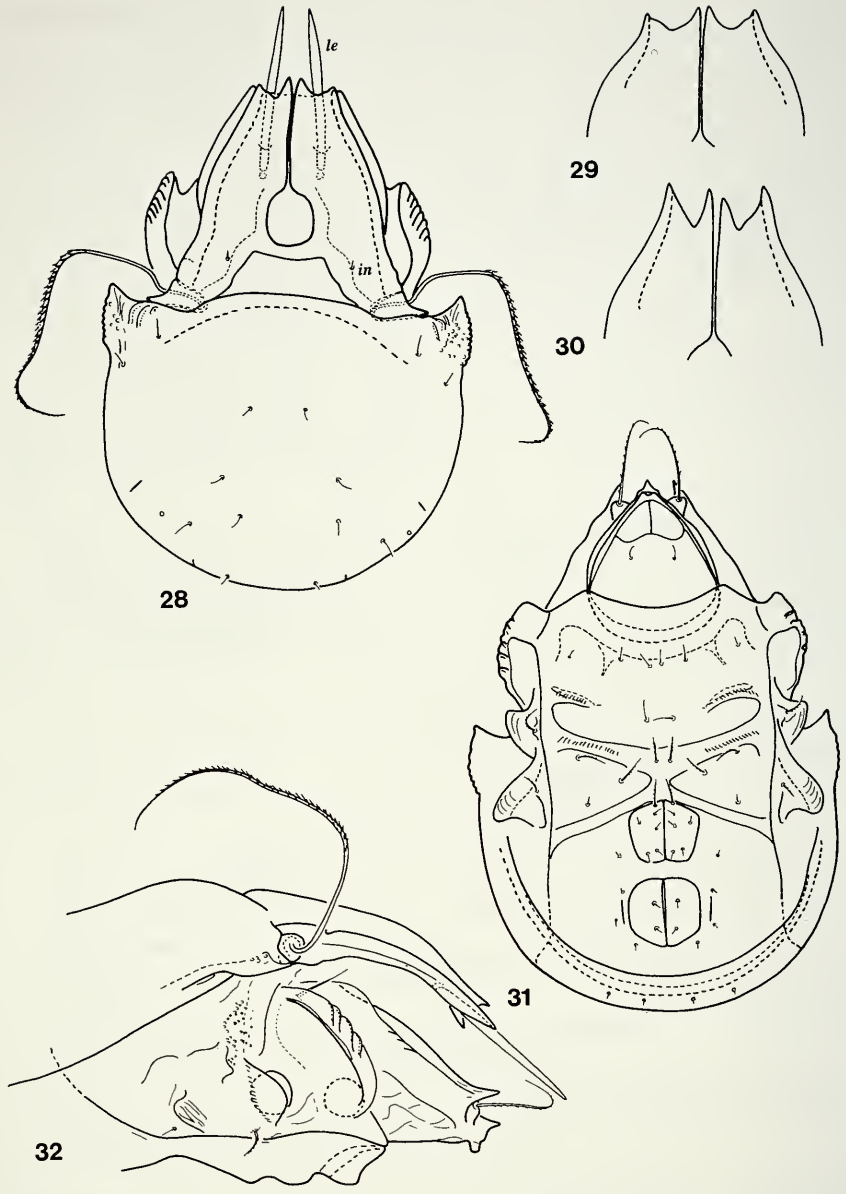






FIGS 25–27

Anakingia borneensis sp. n. – 25: body from dorsal aspect, 26: body from ventral aspect, 27: body from lateral aspect.



FIGS 28–32

Tereja sungai sp. n. – 28: body from dorsal aspect, 29–30: varieties of lamellar cusps, 31: body from ventral aspect, 32: podosoma from lateral aspect.

Integument: Some weak cerotegument granules visible in the shoulder region and in posterolateral position, some stronger ones in the lateral part of podosoma, behind the sejugal apodeme. Cuticle mostly smooth, but some conspicuous granules visible on the pteromorphae, also some wrinkles present on pedotecta 1.

Prodorsum: Rostrum elongated, its apex sharply pointed, characteristically convex in dorsal aspect behind the apex. Lamellae wide, touching medially, excavated basally and connected with each other by a transversal band. Both lamellar cusps present, no essential difference between them, the anterior lamellar border between the two cusps varying (Figs 29–30). Rostral setae long, curved distally, finely ciliate. Lamellar setae (*le*) spiniform, arising from the basal surface. Interlamellar setae (*in*) minute, located on the dorsal surface of the lamellae. Sensillus very long, reclinate, with strong spines on its outer margin arranged in two longitudinal rows.

Lateral region of podosoma: Pedotecta 1 large, with well separated anterior margins. Tutorium with sharply pointed apex, rostral seta arising near to the apex on a large tubercle (Fig. 32). Circumpedal carina well developed, connected with the discidial carina and reaching to pedotecta 1.

Notogaster: The form of pteromorphae characteristic for the genus, nearly triangular, with some large tubercles and wrinkles (Fig. 28). The outline of the body is characteristically impressed in posterolateral position. Nine pairs of fine and short notogastral setae present.

Ventral regions: Coxisternal region with a very strong transversal "X-shaped" band (Fig. 31), the other apodemes and borders very weakly developed. Setae of this region short, finely ciliate, no essential difference between them. Anogenital region normal, anogenital setal formula: 6 – 1 – 2 – 3.

Remarks: The genus *Teraja* was established and discussed by the present author (Mahunka 1995). There is no doubt that the new species belongs to this genus, in spite of the fact that its tutorial apex is simple.

On the basis of the main features (habitus, form of the rostrum, lamellae, pteromorphae and especially the sensillus) *Microzetes tuberculatus* Mahunka, 1987 is closely related to it and consequently has to be transferred to the genus *Teraja*: *Teraja tuberculata* (Mahunka, 1987) **comb. n.**

The four species can be identified by the following key:

1 Outer lamellar apices much longer than the inner ones and bent inwards. Distal apex of the tutorium divided.
– Outer lamellar apices very long, touching each other medially. Distal apex of the tutorium mostly serrate . . . . . *T. wongi* Mahunka, 1995
2 Outer lamellar apices shorter, ending far from each other. Distal apex of the tutorium with long appendages . . . . . *T. fimbriata* (Mahunka, 1988)
– Lamellar apices nearly equal in length, their form triangular.
3 Lamellar setae very thick, resembling a bean-pod, bent inwards; not longer than the diameter of the lamella . . . . . *T. tuberculata* (Mahunka, 1987)
– Lamellar setae spiniform, straight; much longer than the diameter of the lamella . . . . . *T. sungai* sp. n.

Derivatio nominis: After Sungai Liang, the locality of the "Arboretum" of Brunei.

Dolicheremaeus andulauensis sp. n. (Figs 33–38)

Material examined: Holotype: Bru–88/46. 16 paratypes: from the same sample; 8 paratypes: Bru–88/41. Holotype and 15 paratypes: MHNG, 9 paratypes (1455–PO–1993): HNHM.

Measurements. – Length of body: 330–446 µm, width of body: 165–248 µm.

Integument: Cerotegument very thin, being present in very small granules. Integument finely punctate, in the sejugal region pustulate.

Prodorsum: Rostrum rounded. Lamellae narrow, convergent anteriorly, reaching over the insertion of the lamellar setae. Their basal part characteristically bifurcate (Fig. 34) and the two branches delimiting an elliptical field. Lateral lamelliform expansion short, arched, not reaching to the insertion of rostral setae (Fig. 38). Median and lateral prodorsal condyles well developed, separate. Rostral and lamellar setae setiform, more acute than the interlamellar ones. Sensillus long, slightly dilated distally, finely roughened.

Notogaster: Median notogastral condyles semicircular, lateral ones larger. On the lateral margin of notogaster, following the lateral condyles some large protuberances observable (Fig. 33). Ten pairs of acute notogastral setae present, setae c_2 much shorter than the others. Among the four setae in posteromarginal position seta h_3 much shorter than the others. Lyrifissures *ih* and *ips* located before seta h_3.

Coxisternal region: Seta *1c* arising on a small tubercle. Setae *4b* and *4c* originating near to each other, behind them is a short curved crest (Fig. 35).

Anogenital region: All setae simple, setiform. Lyrifissures *iad* located far from the anal opening in inverse apoanal position (Fig. 35).

Legs: Solenidium φ_2 on tibia I stands conspicuously far from φ_1 (Fig. 37). All femora and genua have conspicuously large basal blades (Fig. 36), these ventrodistal scales also very large on genu IV.

Remarks: The new species is well characterised by the basally branched lamellae and the very large ventrodorsal scales on femur and genu of leg III and IV. On this basis the new species is well distinguishable from all heretofore known taxa.

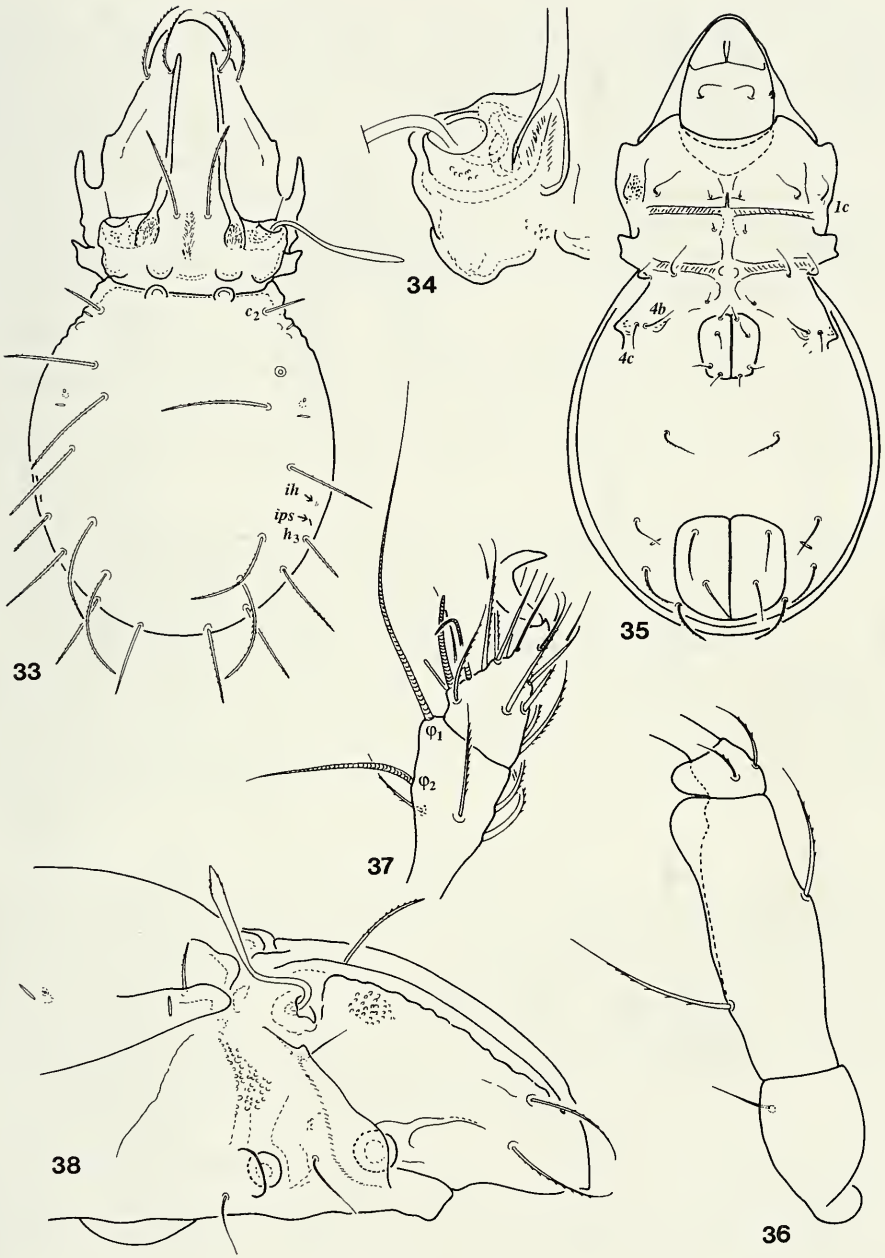
Derivatio nominis: After the "Andulau Forest Reserve".

Dolicheremaeus furcillatus sp. n. (Figs 39–43)

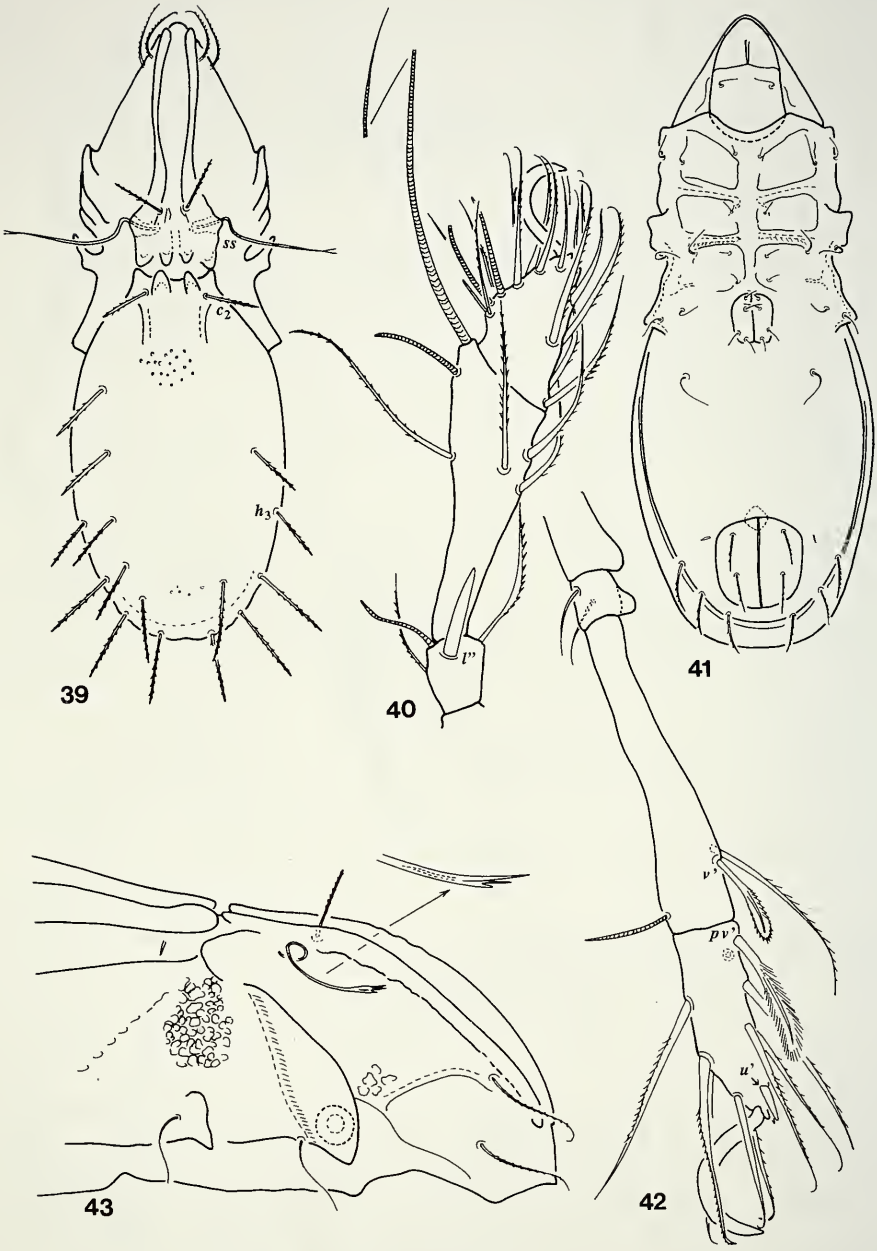
Material examined: Holotype: Bru–88/46; 1 paratype: from the same sample; 1 paratype: Bru–88/21. Holotype and 1 paratype: MHNG, 1 paratype (1456–PO–1993): HNHM.

Measurements. – Length of body: 792–1172 µm, width of body: 289–388 µm. A striking difference exists between male and female.

Integument: Cerotegument not observable. Cuticle glittering, colour very dark brown. Surface of prodorsum smooth, but notogastral surface well foveolate. Sejugal region with characteristic polygonal sculpture, the small polygonate fields protruding like pustules.



FIGS 33–38
Dolicheremaeus andulauensis sp. n. – 33: body from dorsal aspect, 34: bothridium and the basal end of the lamella, 35: body from ventral aspect, 36: trochanter, genus and tibia of leg IV, 37: tibia and tarsus of leg I, 38: podosoma from lateral aspect.



FIGS 39–43

Dolicheremaeus furcillatus sp. n. – 39: body from dorsal aspect, 40: genu, tibia and tarsus of leg I, 41: body from ventral aspect, 42: leg I, 43: podosoma from lateral aspect.

P r o d o r s u m : Lamellae very long, reaching nearly to the rounded apex of rostrum (Fig. 39). Lamellae arched medially, running comparatively near to each other. Very large and well developed prodorsal condyles present. Rostral and lamellar setae setiform, distinctly barbed, interlamellar ones clearly blunter at tip and rarely pilose. Sensillus (*ss*) very long, nearly setiform, with two or three small and short branches at its distal end (Fig. 43). Exobothridial setae minute.

N o t o g a s t e r : Narrow, median part slightly convex, a well framed marginal part observable, separated from the median part by a channel around the notogaster. Its posterior outline slightly undulate in dorsal aspect. Ten pairs of rigid, acute notogastral setae present, all finely ciliate. Setae c_2 and h_3 shorter than the others.

L a t e r a l p a r t o f p o d o s o m a : Lateral lamelliform expansion arched anteriorly, directed toward lamellar setae. Pedotecta I conspicuously large.

C o x i s t e r n a l r e g i o n : Both the apodeme and the border conspicuous. Apodeme 2 and the sejugal apodeme straight, the epimeral fields well framed (Fig. 41), quadrangular.

A n o g e n i t a l r e g i o n : Genital and anal aperture located very far from each other. The distance between the aggenital setae also great. Anal and adanal setae equal in length. All three pairs of adanal setae inserted along the posterior half of anal aperture. Lyrifissures *iad* in apoanal position.

L e g s : Femora of legs I and II with sharply pointed blade-like formation anteriorly. These crests on femora III and IV rounded. All solenidia — excepting the tarsal ones — characteristically acute, never ending in a filiform part. Seta *l*" of genu thick, short, spiniform, setae *v*' of tibia and *pv*" of tarsus IV, phylliform, their margin distinctly ciliate (Fig. 42). Type of the ultimate setae (*u*): L–S–S–S. Legs setal formulae are:

I: 1 – 4 – 3+1– 4+2 –16+2 –1
IV: 1 – 2 – 2 – 2+1 – 12 – 1

Remarks: On the basis of the habitus, the form of lamellae and apodemes the new species belongs to one of the genera of the subfamily Otocepheinae. However, on the basis of main characters (shape of pedotecta 2–3) it must be placed in the genus *Dolicheremaeus*, Jacot, 1928 of the subfamily Tetracondylinae Aoki, 1967. Some features (the position of lyrifissures *iad*, the distance of aggenital setae, the thickened *l*" seta on genua I and II) distinguish the new species from all congeners.

Derivatio nominis: After the form of the sensillus.

Dolicheremaeus wallacei sp. n. (Figs 44–48)

Material examined: Holotype: Bru–88/29, 5 paratypes: from the same sample; 12 paratypes: Bru–88/46. Holotype and 11 paratypes: MHNG, 6 paratypes (1457–PO–1993): HNHM.

M e a s u r e m e n t s . – Length of body: 420–462 (male), 512–594 (female) µm, width of body: 214–306 µm.

I n t e g u m e n t : Very thin cerotegument layer observable, covered with small granules. The cuticle – excepting some smaller areas (exobothridial region,

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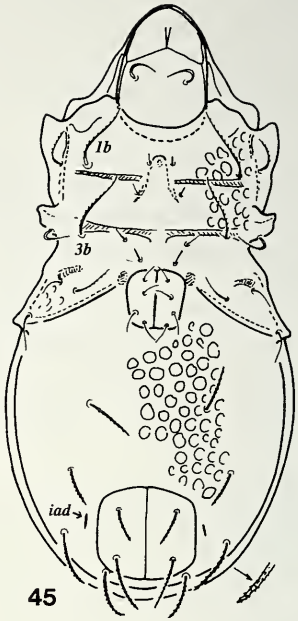

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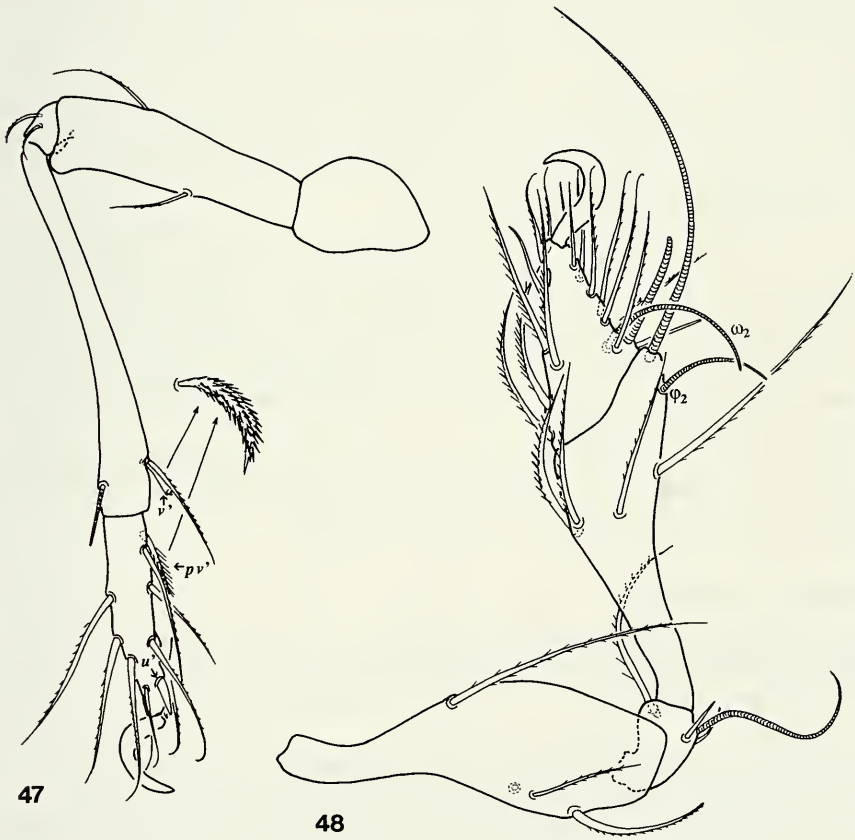
FIGS 44–46

Dolicheremaeus wallacei sp. n. – 44: body from dorsal aspect, 45: body from ventral aspect, 46: podosoma from lateral aspect.

genital plate, legs) – is areolate. Exobothridial region pustulate, genital plates smooth as is the surface of the legs.

P r o d o r s u m : Rostrum widely rounded. Lamellae comparatively narrow, undulate medially and divergent distally, between them a strong crest is formed anteriorly (Fig. 44). Lamellar cuspis observable. Interlamellar region mostly alveolate, but around the insertion of the interlamellar setae a longitudinal crest observable. Tutorium absent, but the "lateral lamelliform expansion" present. This latter arched anteriorly and not reaching to the rostral seta (Fig. 46). Median prodorsal condyles fused, lateral ones normal. Rostral and lamellar setae setiform, interlamellar setae blunt at tip. Peduncle of the sensillus very long, with small, scarcely dilated, cylindrical head. Its surface finely roughened.



FIGS 47–48

Dolicheremaeus wallacei sp. n. — 47: leg IV, 48: leg I.

N o t o g a s t e r : Median and lateral condyles conspicuous, median ones sometimes partially fused. Inner pair rounded, the lateral ones triangular. Ten pairs of notogastral setae present, all blunt at tip and finely roughened. Seta c_2 shorter than *da*, the others — excepting the posteromarginal ones — nearly equal in length. Setae p_1, p_3 and h_3 much shorter than p_2.

L a t e r a l r e g i o n o f p o d o s o m a : Pedotecta 1 long, their dorsal margin sharply pointed, the minute exobothridial setae arising at the basis of pedotecta. Pedotecta 2–3 triangular, shape typical for the genus.

C o x i s t e r n a l r e g i o n : Apodeme 2 and *ap. sej.* straight, well developed, ap_3 represented only by its short basal part. Between ap_2 an elongated hollow present. Coxisternal region bordered posteriorly by a sharp tectum or minitectum ending medially near the genital aperture, at the tubercular aggenital thickening (apodeme). Epimeral setal formula: 3 – 1 – 3 – 3. Among them setae *1b*, *3b* very long, directed forwards, seta *4b* also longer than the other epimeral setae.

A n o g e n i t a l r e g i o n : Anogenital setal formula: 4 – 1 – 2 – 3. The anterior genital seta located far from the margin of the genital plate. Genital setae simple, aggenital, anal and adanal setae thicker, longer and ciliate, adanal setae blunt at tip, similar to those of notogaster. Lyrifissures *iad* in adanal position, slightly far from the margin of the anal aperture (Fig. 45).

L e g s : Type of the ultimate (*u*) setae: L–S–S–S. Solenidia ω_2 and φ_2 conspicuously long, directed and arched backwards (Fig. 48). Seta *v'* on trochanter IV absent. Seta *v''* on tibia IV and seta *pv''* on tarsus IV dilated, distinctly pilose (Fig. 47).

Remarks: The new species is well characterised by the following: sharp protruding crest between the lamellae, very long sensillus, minute spindle-shaped head, peculiar sculpture of the body, very great difference among the posteromarginal setae and the absence of seta *v'* on trochanter IV.

Derivatio nominis: I dedicate this new species to the great naturalist Alfred Russel Wallace (28.I.1823 – 6.XI.1913), author of "The Malay Archipelago" (1869) and pioneer of the zoological exploration of South-East Asia.

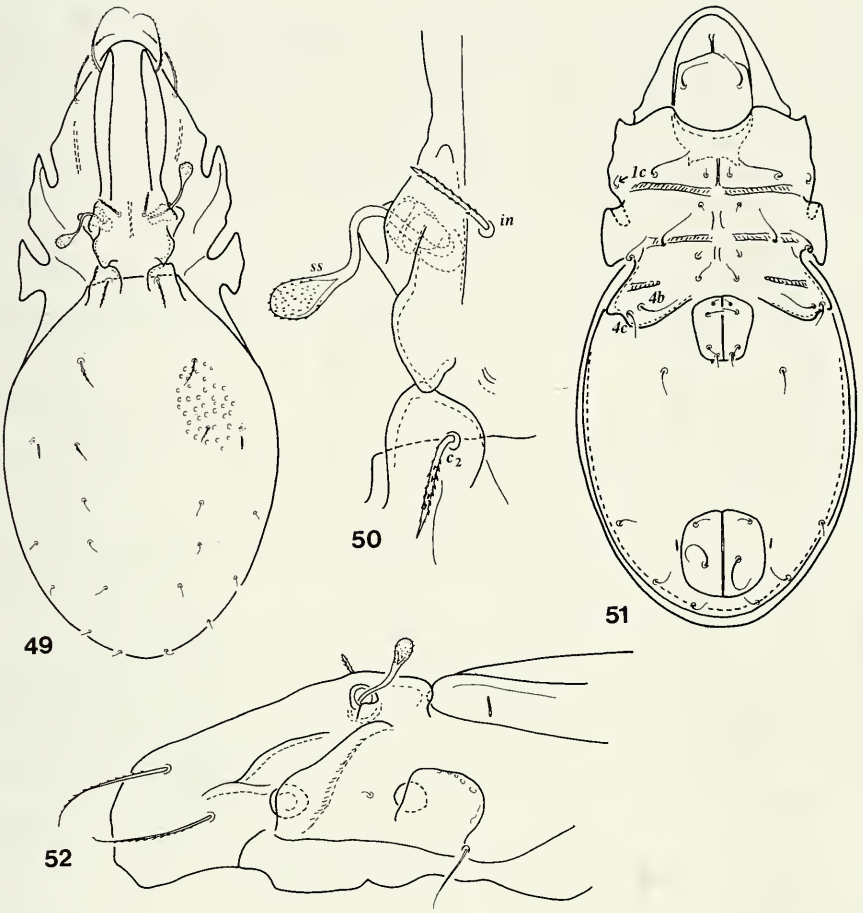
Otocepheus durian sp. n. (Figs 49–55)

Material examined: Holotype: Bru–88/46, 5 paratypes: from the same sample. Holotype and 3 paratypes: MHNG, 2 paratypes (1458–PO–1993): HNHM.

M e a s u r e m e n t s . – Length of body: 602–676 µm, width of body: 222–281 µm.

I n t e g u m e n t : Finely granulated cerotegument layer observable everywhere, excepting the surface of the legs. Cuticle sparsely foveolate.

P r o d o r s u m : Rostrum widely rounded. Lamellae broad, running to rostrum, approximately parallel (Fig. 49). One pair of large, lateral prodorsal condyles present, angulate. Tutorium weakly developed, but observable; lateral lamelliform expansion not extending to the insertion of rostral seta (Fig. 52). Rostral and lamellar setae normal, setiform, interlamellar one bacilliform, spatulate. Sensillus short, with a comparatively large, round head, its surface finely spiculate (Fig. 50).



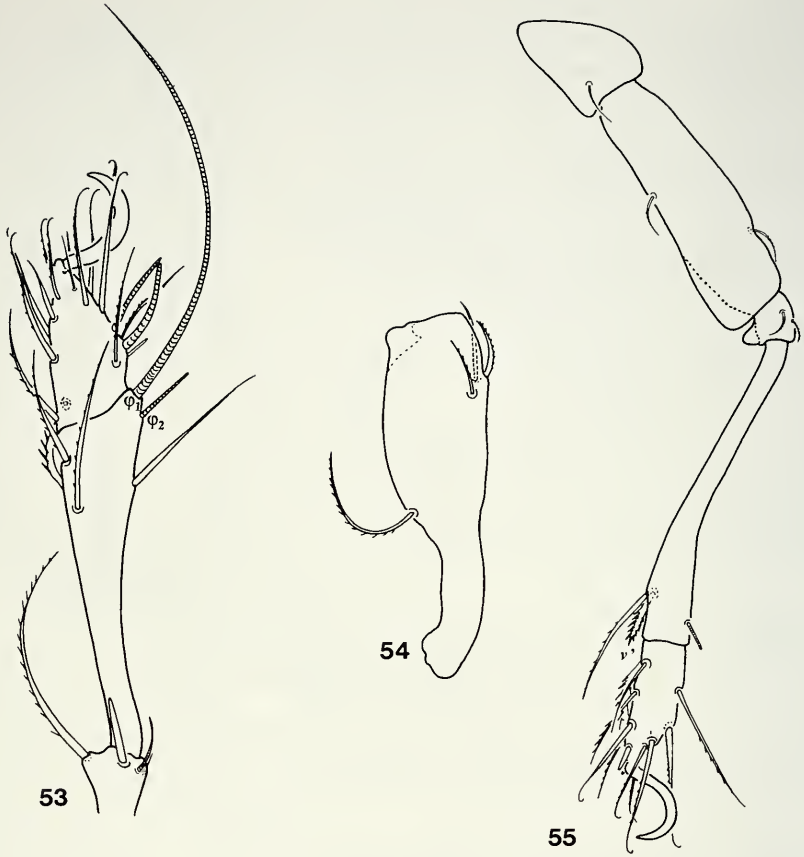
FIGS 49–52

Otocepheus durian sp. n. – 49: body from dorsal aspect, 50: trichobothrium and the lateral prodorsal and notogastral condyles, 51: body from ventral aspect, 52: podosoma from ventral aspect.

N o t o g a s t e r : One pair of large lateral condyles present opposite to the prodorsal ones. The position of notogastral setae characteristic, they — excepting the posteromarginal ones — arising in two parallel longitudinal rows (Fig. 49). Their length and ciliation decreasing posteriorly, setae *p* and h_3 equal in length.

Lateral part of podosoma: Pedotecta 1 large, pedotecta 2–3 typical fish-tail-shaped, also large (Fig. 52). Discidium normal.

C o x i s t e r n a l r e g i o n : Apodeme and the epimeral borders normal, a short sternal apodeme also observable in the front of *ap. 2*. A well developed pos-



FIGS 53–55

Otocepheus durian sp. n. — 53: tibia and tarsus of leg I, 54: femur of leg I, 55: leg IV.

terior border (minitectum) running from the discidium to the anterior margin of the genital opening (Fig. 51). Among the epimeral setae great differences exist in their length, setae *1a*, *1c* (!), *2a*, and *3a* short and simple, the others long and directed inwards. Setae *4b* and *4c* located laterally, near the discidium.

A n o g e n i t a l r e g i o n : Genital and anal plates without sculpture. Aggenital setae arising conspicuously far from each other, genital and aggenital setae simple. All setae short – excepting an_1 –, adanal setae not longer than notogastral ones. Lyrifissures *iad* located in adanal position.

L e g s : All femora have weakly developed blades ventrally, observable also on genu IV (Figs 54–55). Solenidium φ_2 located near to φ_1 (Fig. 53). Seta *l'* on genu I fine and short, seta *l"* large, spiniform. Seta *v"* of tibia IV, and *pv"* on tarsus, dilated, well ciliate. Type of the ultimate setae: L–S–S–S. Setal formula of legs normal.

Remarks: There is no doubt that this new species belongs to the genus *Otocepheus* Berlese, 1905. It is readily distinguished from all other related species by the characteristic form of its notogastral setae and the great difference existing between setae an_1 and an_2.

Derivatio nominis: After the Durian (*Durio zibethinus* Murray), a delicious tree fruit (Bombacaceae) of an exquisite and unsurpassed flavour, considered by A.R. Russel as the "king of the fruits".

Dampfiella zellwegeri sp. n. (Figs 56–61)

Material examined: Holotype: Bru–88/46; 1 paratype: Bru–88/21; 1 paratype: Bru–88/29. Holotype and 1 paratype: MHNG, 1 paratype (1459–PO–1993): HNHM.

M e a s u r e m e n t s . – Length of body: 400–512 µm, width of body: 115–142 µm. Great difference observable between male and female.

I n t e g u m e n t : Cuticle, excepting the surface of all femora, smooth, the latter well foveolate.

P r o d o r s u m : Dorsal surface concave medially in lateral aspect (Fig. 61). Rostrum rounded. Some irregular spots are present on the usual sites. Rostral and lamellar setae normal, ciliate, interlamellar one very short, but also ciliate. Exobothridial seta (*ex*) minute. Sensillus conspicuously long, directed backwards and outwards, with a large, asymmetrical, spiculate head.

L a t e r a l r e g i o n o f p o d o s o m a : Pedotecta 1 large, dorsal margin undulate. Bothridium slightly elongated posteriorly.

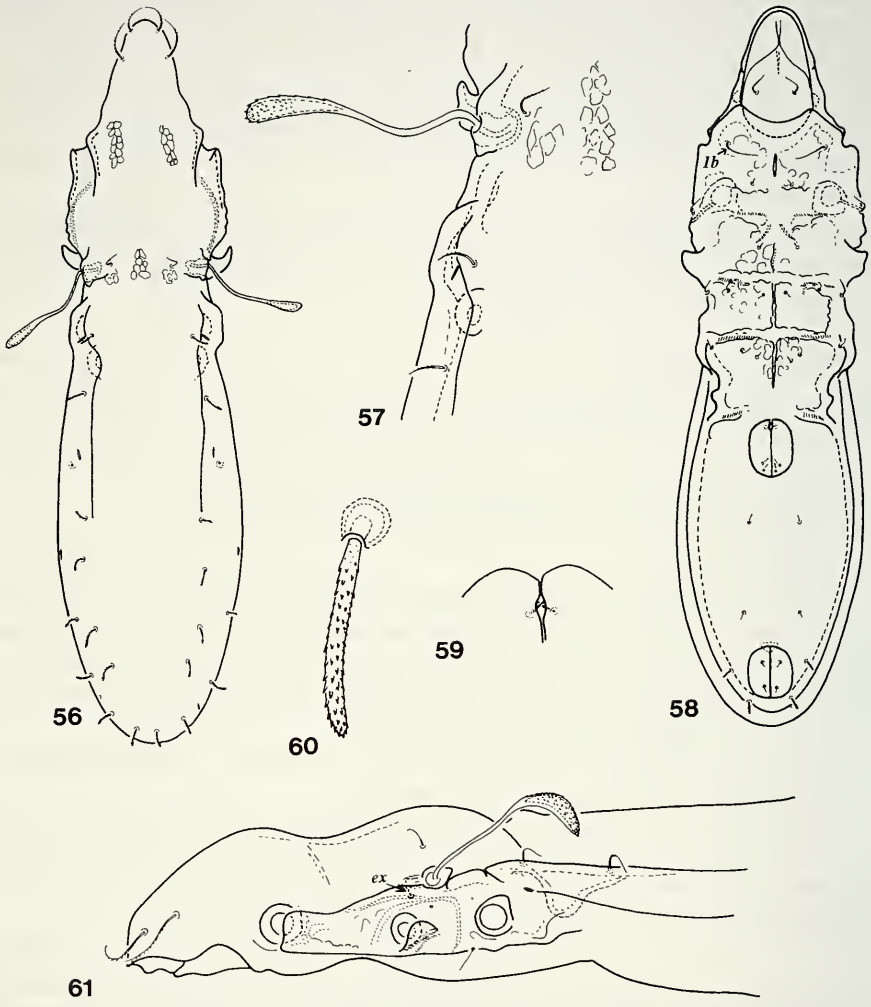
N o t o g a s t e r : Shoulder normal, from here a fine crest runs posteriorly and reaches to the insertion of seta *lm*. This crest is not connected with the border of the notogastral cavity which is relatively small (Fig. 56). Ten pairs of short, bacilliform notogastral setae (Fig. 60) present, no essential difference between them.

V e n t r a l r e g i o n s (Fig. 58): Very similar to that of other *Dampfiella* species from the Oriental Region. All coxisternal setae simple, seta *1b* the longest of all. Setae *1c* and *4c* sometimes reduced. Their position is given in Fig. 58. Anogenital setal formula: 3 – 1 – 2 – 3. The anterior genital setae arising on the inner margin of the genital plates (Fig. 59). Aggenital, anal and ad_3 setae minute, the other adanal ones bacilliform, like the notogastral setae.

L e g s : Solenidia ω_1 and ω_2 normal, nearly equal in length. δ of genu characteristically curved anteriorly. Legs setal formulae are:

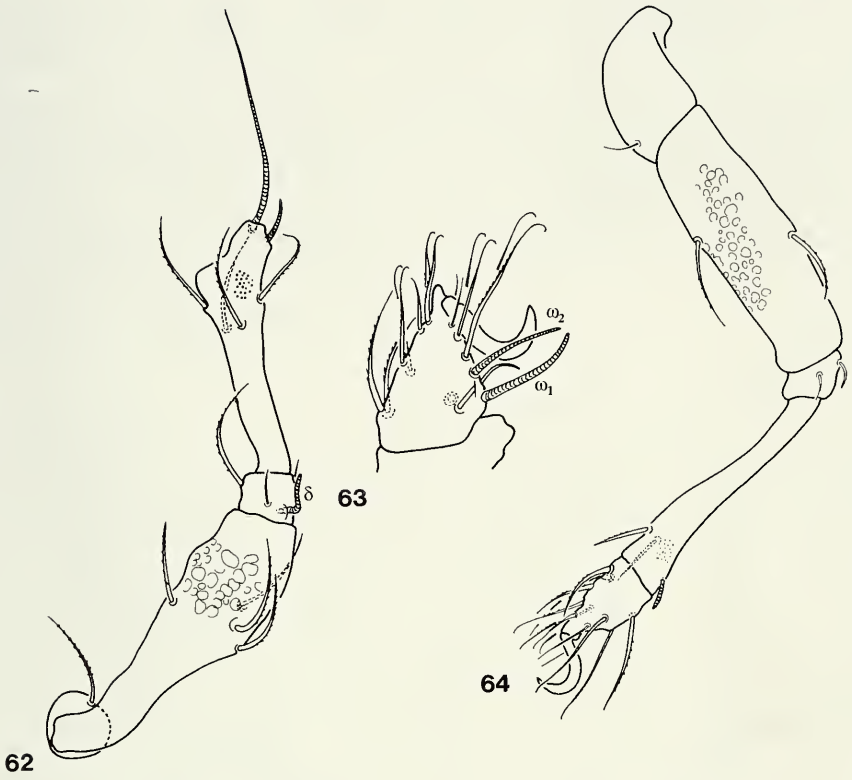
I: 1 – 4 – 3+1 – 4+2 – 16+2 – 1 (Fig. 62–63)
IV: 1 – 2 – 2 – 2+1 – 12 – 1 (Fig. 64)

Remarks: The new species is well characterised by the bacilliform and finely spiculate notogastral setae and the form of the sensillar capitulum. The heretofore known



FIGS 56–61

Dampfiella zellwegeri sp. n. – 56: body from dorsal aspect, 57: trichobothrium and the anterolateral part of notogaster, 58: body from ventral aspect, 59: anterior part of genital plates, 60: seta p2, 61: podosoma from lateral aspect.



FIGS 62–64

Dampfiella zellwegeri sp. n. — 62, 63: leg I, 64: leg IV.

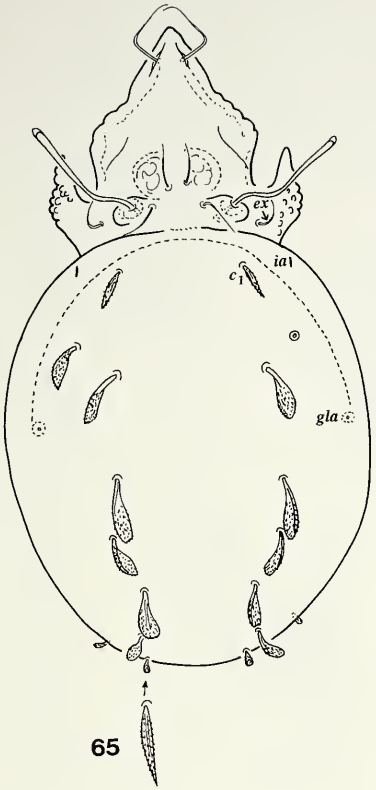
Dampfiella species from this region (*D. angusta* Hammer, 1980, *D. dubia* Hammer, 1971, *D. euaensis* Hammer, 1973, *D. foliata* Balogh & Mahunka, 1974, *D. prostrata* Aoki, 1965 and *D. similis* Hammer, 1971) have only smooth and spini- or setiform (in one case phylliform) notogastral setae.

Derivatio nominis: I dedicate this new species to my friend P. Zellweger, responsible for microscopy, Bio-Med department of the ZEISS branch establishment in Lausanne, for his technical help.

Suctoribates foliatus sp. n. (Figs 65–70)

Material examined: Holotype: Bru–88/41, 24 paratypes: from the same sample; 2 paratypes: Bru–88/29. Holotype and 16 paratypes: MHNG, 10 paratypes (1460–PO–1993): HNHM.

M e a s u r e m e n t s . – Length of body: 346–462 μm, width of body: 198–281 μm.



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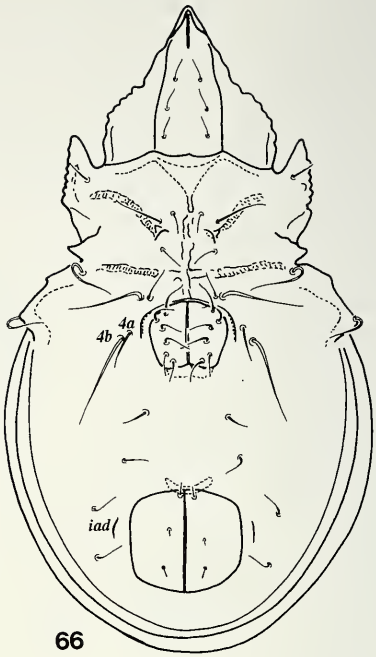

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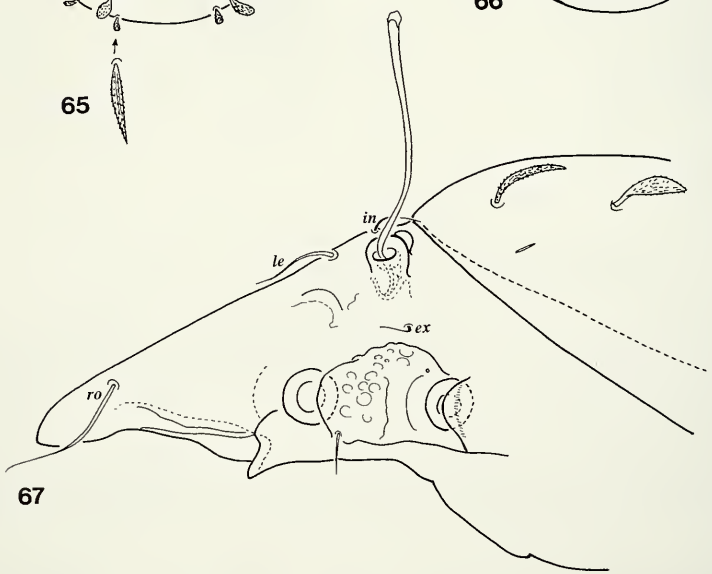

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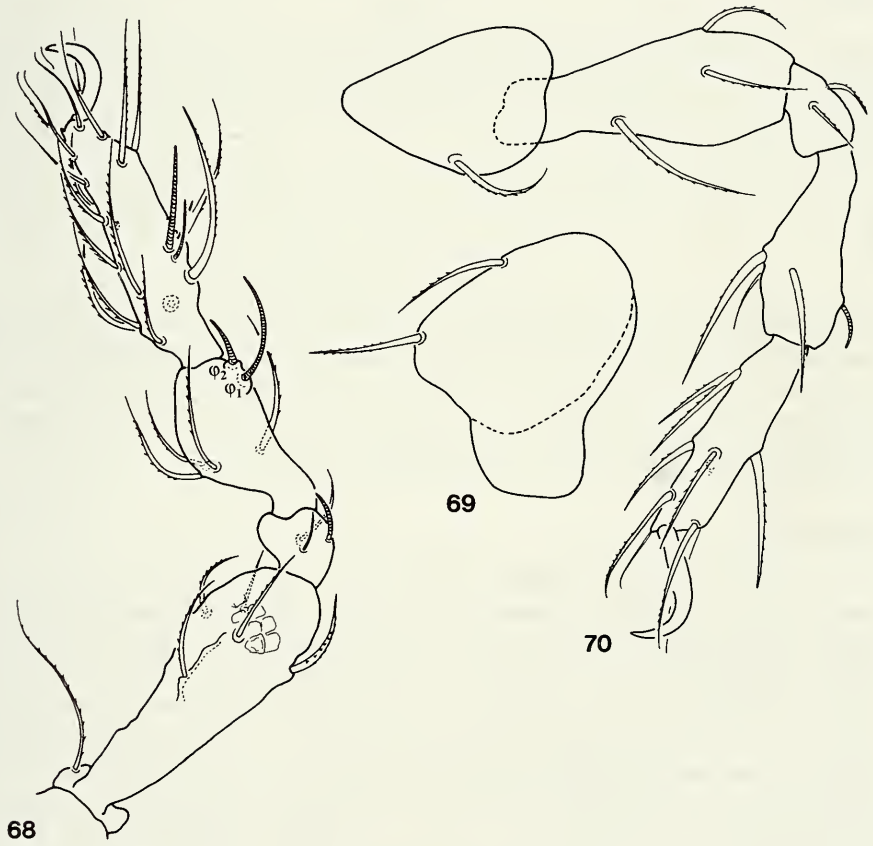
FIGS 65–67

Suctoribates foliatus sp. n. – 65: body from dorsal aspect, 66: body from ventral aspect, 67: podosoma from lateral aspect.

I n t e g u m e n t : The whole body surface, including the legs, covered by cerotegument layer. Cuticle generally smooth, but all femora ornamented by crests forming a polygonal reticulation.

P r o d o r s u m : Rostrum elongated, Prodorsal surface with one pair of low depressions, bordered by a weak lath laterally. Bothridium well protruding like a cup. Rostral setae strong, bent characteristically inward, arising on the dorsal surface of prodorsum. Lamellar setae simple, inserted near to each other, between the depressions, in the basal part of the prodorsum. Interlamellar setae short and fine, directed backwards. Exobothridial setae (*ex*) only slightly shorter than the preceding ones. Sensillus long, directed outwards, bacilliform, with a small, separate distal apex (Fig. 65).



FIGS 68–70

Suctoribates foliatus sp. n. — 68: leg I, 69: femur of leg III, 70: leg IV.

Lateral region of podosoma: Pedotecta 1 large, ornamented by very large tubercles (Fig. 67).

Notogaster: Nine pairs of dilated, phylliform notogastral setae present (seta p_3 absent). Their form and size much varying. Seta c_2, p_1, and p_2 narrow, willow-leaf-shaped, the other setae wider and spoon-shaped (Fig. 65). Only two pairs of lyrifissures (*ia* dorsally, and *im*? marginally) and the glandular opening observable.

Coxisternal region: Mental tectum well protruding medially, this apex visible also in lateral aspect (Fig. 67). Apodemes and borders weakly developed, only the sejugal ones are complete and fused medially with the part of the sternal apodeme. In front of the genital opening a strong, well arched crest observable. Epimeral setal formula: 3 – 1 – 3 – 3, setae *1a* and *1b*, *3a* and *3b*, *4a* and *4b* located very near to each other (Fig. 66). Most of epimeral setae long, but scarcely ciliate or roughened.

Anogenital region: Anogenital setal formula: 6 – 1 – 2 – 3. Genital setae long, aggenital setae slightly thicker than the preceding ones, anal setae minute and located in the anterior part of the anal plates. Adanal setae simple and arising laterally, none of them inserted in postanal position. Lyrifissures *iad* located far from the anal aperture.

Legs: Trochanters III and IV with a horizontal plate (Fig. 69). Setal formulae of legs are:

I: 1 – 4 – 2+1 – 4+2 – 20+2 – 1 (Fig. 68)
IV: 1 – 3 – 2 – 3+1– 10 – 1 (Fig. 70)

Remarks: The genus *Suctoribates* Balogh, 1963 shows a circumtropical distribution, although only three species have previously been described: one from Africa, one from South America and one from Java. The new species is well characterised by the widely foliate notogastral setae.

Derivatio nominis: After the form of the notogastral setae.

Bolkiah gen. n.

Diagnosis: Family Haplozetidae. Female and male very different in size. Body surface uniformly ornamented by foveolae. Rostrum rounded. Lamellae reduced, partly absent, their short basal and distal end observable, but not visible in dorsal aspect. Lamellar setae inserted on their blunt cusp (Fig. 75). Tutorium weak, triangular, without cusp, not extending to the rostral seta. Exobothridial seta minute, all other prodorsal setae thick, thickly ciliate. Sensillus setiform, directed outwards and backwards. Dorsosejugal porose area absent. Eleven (!) pairs of notogastral setae, two (!) pairs of minute sacculi, five pairs of lyrifissures present. Pteromorphae movable. Epimeral setal formula: 3 – 1 – 3 – 3. Anogenital setal formula: 5 – 1 – 2 – 3. Lyrifissures *iad* in adanal position, located at the anterior corner of the anal opening. Circumpedal carina present, discidium well developed, custodium absent. Anal plates with high, sharp median blades (Fig. 74). Another longitudinal crest runs on the plates laterally. All legs monodactylous.

Type species: *Bolkiah hauseri* sp. n.

Remarks: On the basis of the above characters the new genus has to be placed in the family Haplozetidae Grandjean, 1936. It is distinguished from the heretofore known genera by the reduced lamellae, the eleven pairs of notogastral setae and the two pairs of minute sacculi.

Derivatio nominis: After the family name of the reigning Sultan of Brunei The gender of the genus name is masculine.

Bolkiah hauseri sp. n. (Figs 71–81)

Material examined: Holotype: Bru–88/41, 15 paratypes: from the same sample; 50 paratypes: Bru–88/46. Holotype and 40 paratypes: MHNG, 25 paratypes (1461–PO–1993): HNHM.

Measurements. – Length of body: 511–594 µm (females), 420–462 µm (males), width of body: 379–420 µm (females), 288–330 µm (males).

Integument: Cerotegument layer covering irregularly the different parts of the body, mostly the notogaster. Cuticle regularly foveolate on the prodorsum, notogaster and the anal plates. The form of foveolae varying on the mentum and the sternal surface, on the latter smaller foveolae medially and larger ones laterally. Genital plates ornamented by minute, anal plates by normal, foveolae, as on the notogastral surface. The foveolate sculpture observable also on some joints of the legs, i.e. on trochanters III and IV and on the femora.

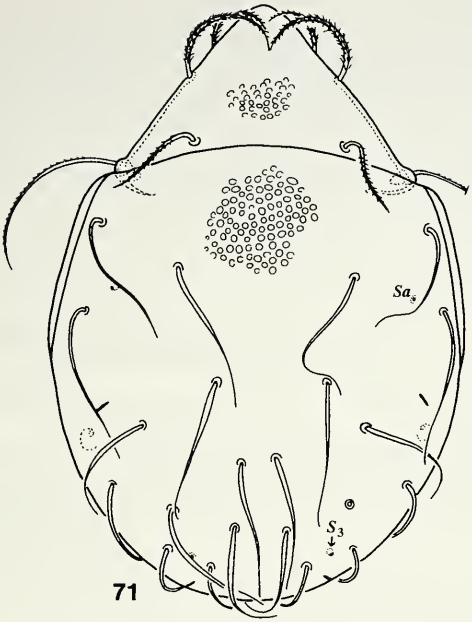
Prodorsum: Rostrum conical in dorsal aspect, prodorsal surface concave behind the rostrum in lateral aspect (Fig. 75). Lamellae poorly developed, not observable in dorsal aspect (Fig. 71). Lamellar cusp is also reduced. Tutorium much stronger than the lamella (Fig. 77), two other crests visible in this region. Porose area *Al* conspicuously large. Rostral and lamellar setae arising laterally, both distinctly and thickly ciliate. Interlamellar setae slightly blunter at tip, with fewer and straighter cilia. Sensillus reclinate, setiform, with spicules on its distal half, arranged mostly in two rows.

Notogaster: Dorsosejugal suture moderately undulate, without depression. Pteromorphae (Fig. 72) rounded. Dorsophragmatic apophyses (*hy*) small and hardly observable. Eleven pairs of long, smooth and slightly thickened notogastral setae present. Only two pairs (*Sa*, S_3) of minute sacculi were observable. Among the lyrifissures *ia* located on the pteromorpha while *ih* and *ips* in posterolateral position, very near to each other. The opening of the gland is small and circular.

Lateral region of podosoma: Pedotecta 1 very small, flattened. Discidium well developed, with a strong median edge. Circumpedal carina confluent with the discidial carina.

Gnathosoma: Chelicerae normal, palp also with its normal setation, as shown in Fig. 79.

Coxisternal region: Sejugal apodeme complete, with small thickening medially in front of the genital opening (Fig. 73). Apodemes 2 and 3 short.



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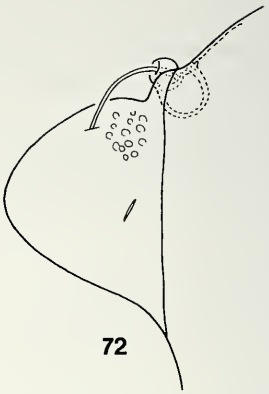

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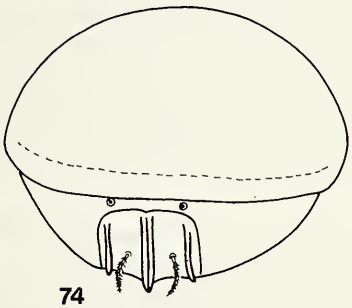

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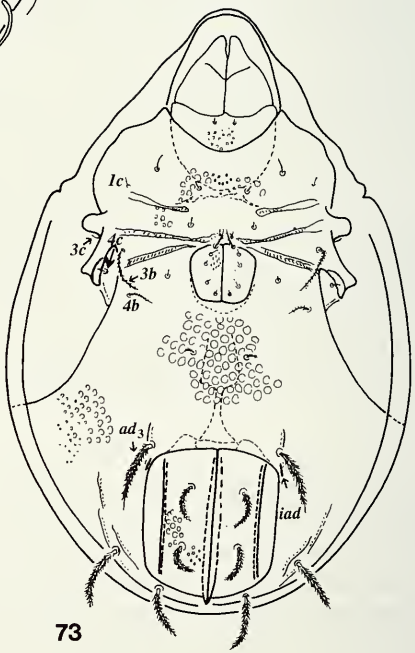

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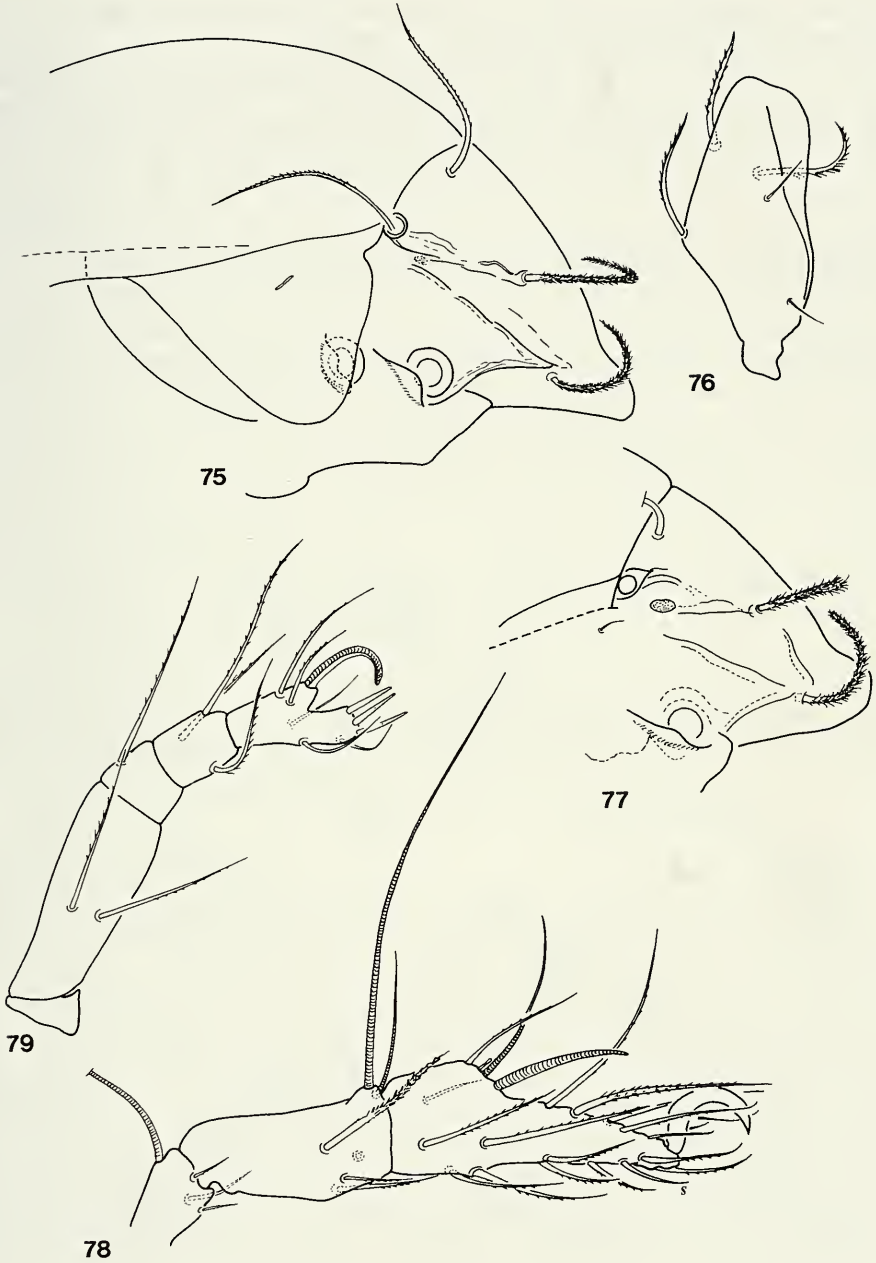
FIGS 71–74

Bolkiah hauseri gen. n., sp. n. – 71: body from dorsal aspect, 72: pteromorpha, 73: body from ventral aspect, 74: blades of anal plates from posterior aspect.



FIGS 75–79

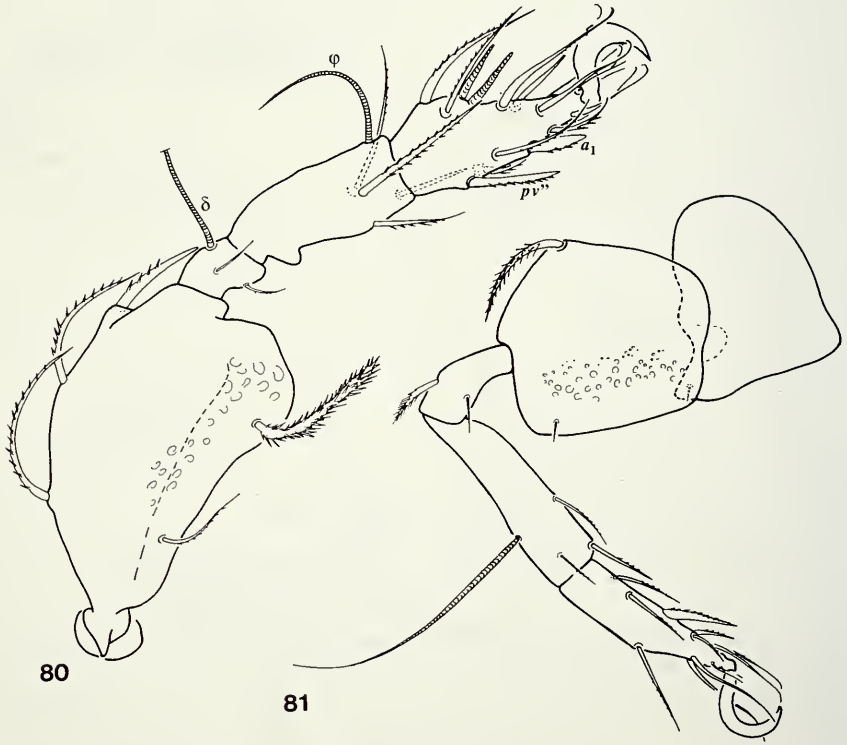
Bolkiah hauseri gen. n., sp. n. – 75, 77: prodorsum and podosoma from lateral aspect, 76: femur of leg I, 78: genu, tibia and tarsus of leg I, 79: palp.

The epimeral setation is normal, but well distinguished in their form: setae *3b* and *4b* long and distinctly ciliate, all the others minute and simple.

A n o g e n i t a l r e g i o n : Ventral plate with two depressions laterally. Median margin of the anal plates modified like a blade, composing a high median edge. A well protruding extra longitudinal crest also present on the anal plates (Fig. 74). Among the genital setae a great difference observable, seta g_1 long, ciliate, all the others minute. Aggenital setae also very short, but clearly ciliate. Anal and adanal setae similar to rostral or lamellar setae, distinctly and thickly ciliate. Lyrifissures *iad* located very near to the anterior corner of the anal opening, behind setae ad_3. Setae ad_3 originating on short crests.

L e g s : All femora have blades, they are in ventrolateral position on femora I and II, ventral on trochanter and femora III and IV. The setal formulae are:

I: 1 – 5 – 3+1 – 4+2 – 20+2 – 1 (Figs 76, 78)
II: 1 – 5 – 3+1 – 4+1 – 15+2 – 1 (Fig. 80)
IV: 1 – 2 – 3+1 – 12 – 1 (Fig. 81)



Figs 80–81

Bolkiah hauseri gen. n., sp. n. – 80: leg II, 81: leg IV.

Some setae characteristically modified, i.e. *pv*" and a_1 on tarsus II, seta *p* on tarsi III and IV.

Remarks: Refer to the remarks after the generic diagnosis.

Derivatio nominis: I dedicate the new species to my friend Dr. B. Hauser who collected this very rich and interesting material.

Borneozetes gen. n.

Diagnosis: Family Haplozetidae. Rostrum rounded. Lamellae well developed, running in marginal position, cusps small and short, but lamellar setae arising on them. Translamella present. Tutorium (Fig. 84) very strong, at the insertion of the rostral setae directed inwards and forwards. Sensillus setiform, reclinate. Dorsosejugal suture complete, strongly arched anteriorly. Pteromorphae movable. Notogaster with two conspicuous, posterior tubercles. Fourteen pairs of phylliform notogastral setae, 4 pairs of very small sacculi[6], the glandular openings also visible. Discidium with a long, sharp spiniform appendage, directed inwards. Custodium absent. Circumpedal carina present, well developed, but not connected with the discidial carina. Ventral plate with a pair of strong longitudinal crests. Anogenital setal formula: 5 – 1 – 2 – 3. Gnathosoma normal. All legs monodactylous, with normal chaetom. Femora of legs II, III and IV with broad blade-like lamina ventrally.

Type species: *Borneozetes lanceolatus* sp. n.

Remarks: On the basis of the posteromarginal tubercles the new genus resembles *Baloghia* Mahunka, 1993. The latter one differs by the lamellar region, by the number of sacculi (2 pairs in *Baloghia*) and by the form and position of the notogastral setae.

Derivatio nominis: After the island of Borneo.

Borneozetes lanceolatus sp. n. (Figs 82–87)

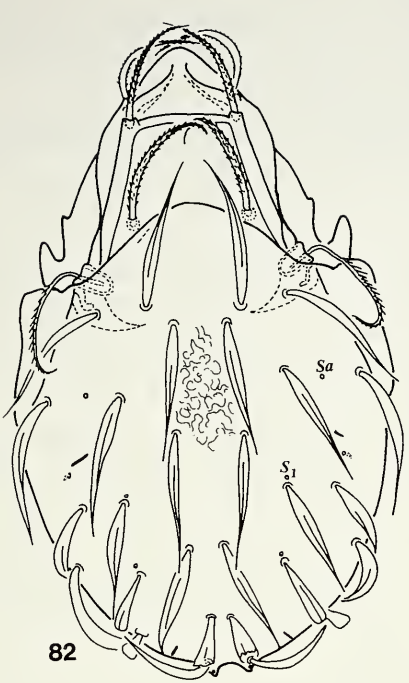
Material examined: Holotype: Bru–88/29, 22 paratypes: from the same sample. Holotype and 14 paratypes: MHNG, 8 paratypes (1462–PO–1993): HNHM.

M e a s u r e m e n t s . – Length of body 297–396 µm, width of body: 181–264 µm. Male and female significantly different in size.

I n t e g u m e n t : Nearly the whole surface covered by a cerotegument layer, which forms an irregular polygonal reticulation on the notogaster and the ventral plates. Surface — excepting mentum, genital and anal plates — strongly granulate.

P r o d o r s u m : Surface of the lamellar and interlamellar setae distinctly pilose (Fig. 82), rostral setae are the same in thickness and in length, but their surface only finely roughened. Sensillus directed backwards, outer margin bearing thin spines arranged in two longitudinal rows. The length of spines decreases toward the distal end.

[6] The fourth pair of sacculi seems to be on the posterior tubercle of the notogaster. The other sacculi – excepting *Sa* – are hardly observable, located at the insertion of the notogastral setae. The "sacculi" on the tubercle could be glandular openings, if so only three pairs of sacculi are present on the notogaster.



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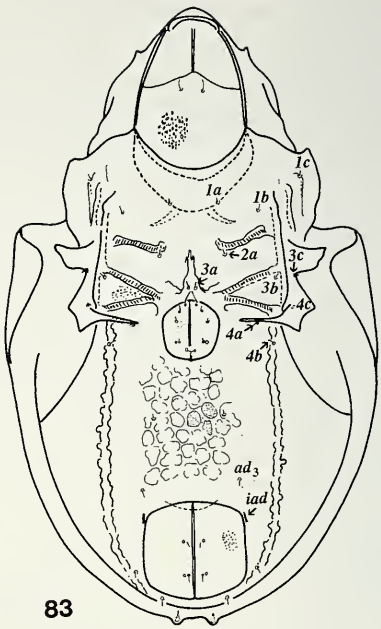

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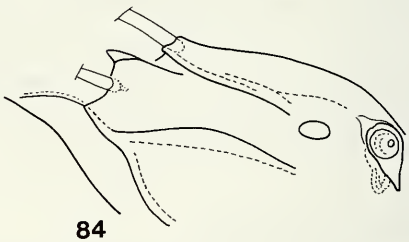

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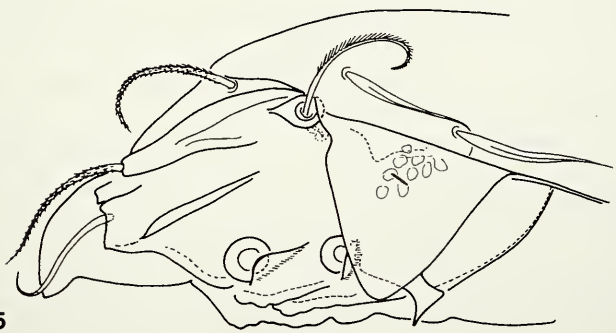

85

FIGS 82–85

Borneozetes lanceolatus gen. n., sp. n. – 82: body from dorsal aspect, 83: body from ventral aspect, 84: cusps of tutorium and lamella from lateral aspect, 85: podosoma from lateral aspect.

FIGS 86–87
Borneozetes lanceolatus gen. n., sp. n. — 86: leg IV, 87: leg I.

L a t e r a l r e g i o n o f p o d o s o m a : Pedotecta 1 low in lateral aspect (Fig. 85). Discidium with a double undulation posteriorly. Circumpedal carina long, reaching to the lateral margin of ventral plate. It is not connected with the discidial carina and runs to epimere 1.

N o t o g a s t e r : Dorsosejugal suture strongly convex, reaching anteriorly between the interlamellar setae. Pteromorpha large (Fig. 85), bent down to the coxisternal region. Fourteen pairs of willow-leaf-shaped notogastral setae present. Some of them, in posteromarginal position, smaller than the others.

G n a t h o s o m a : Chelicerae and the palp are normal, the solenidium and the eupathidium *acm* are very long and strongly curved.

C o x i s t e r n a l r e g i o n : Apodeme well developed, *ap. sej.* and *ap. 3* join with each other. *ap. 4* short, but present. In the sternal region a short ridge observable, running from the genital aperture anteriorly (Fig. 83). Setae *3a* arising on them, near to each other. Epimeral setal formula: 3 – 1 – 3 – 3. All setae minute, seta *3c* and *4c* hardly observable.

A n o g e n i t a l r e g i o n : Ventral plate with a pair of long longitudinal crests reaching anteriorly to epimere 4, posteriorly framing the anal aperture. Anogenital setal formula: 5 – 1 – 2 – 3, all the setae minute and spiniform. Seta ad_3 located anterior of the anal aperture, lyrifissures *iad* in normal position.

L e g s : The basal part of the tarsus and tibia I with strong longitudinal or partly askew crests. The outer side (in dorsal aspect) of these joints is well porose. The outer side of all leg-joints also porose. The femora of legs II–IV with a broad ventral blade-like formation. Setal formulae of legs are:

I: 1 – 5 – 3+1 – 4+2 – 20+2 – 1 (Fig. 87)
IV: 1 – 2 – 2 – 3+1 – 10 (Fig. 86)

Both tarsi I and II bearing modified seta *a'*, their cilia very large, so the seta pectinate (Fig. 87). Seta *a* on tarsus IV conspicuously thick, spiniform (Fig. 86).

Derivatio nominis: After the form of the notogastral setae.

ACKNOWLEDGEMENTS

I wish to thank Dr. R.A. Norton (Syracuse University, NY, USA) for checking some of my determinations and giving his comments on the genera *Parhypochthonius* and *Epilohmannoides*. I am very grateful to Dr. Malcolm Luxton (National Museum of Wales, Cardiff) for his many suggestions and his very careful review of this manuscript.

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